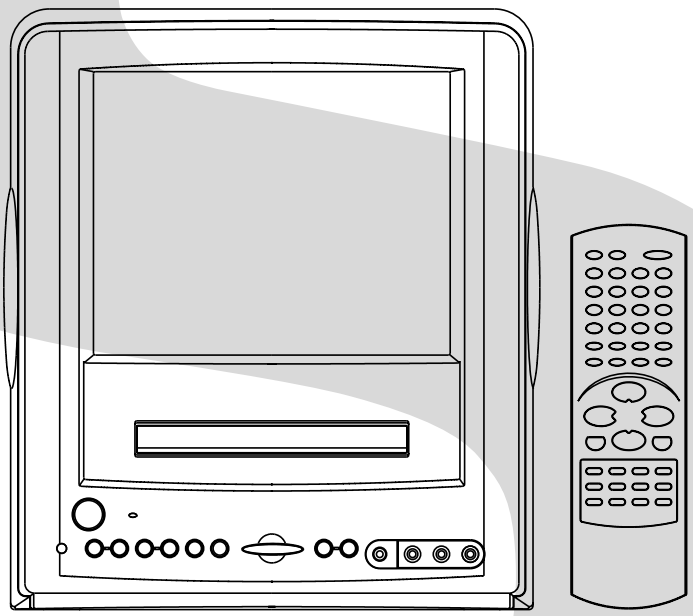
TOSHIBA

FILE NO. 140-200217

# SERVICE MANUAL

# COLOR TELEVISION/ DVD VIDEO PLAYER

# MD9DM1



# CAUTION

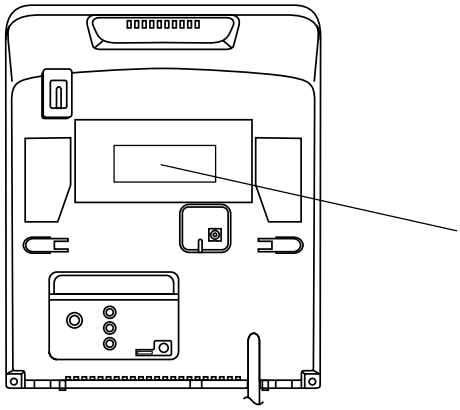
THIS DIGITAL VIDEO PLAYER EMPLOYS A LASER SYSTEM.

TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS SERVICE MANUAL CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

USE OF CONTROLS, ADJUSTMENTS OR THE PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE. VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

**Location of the required Marking**
The rating sheet and the safety caution are on the rear of the unit.



# SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

### 2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

### 3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

### 4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

### 5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

### 6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

### 7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

**(INSULATION CHECK PROCEDURE)**

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

**[Note 1]**

If you have not the 500V insulation resistance meter, use a Tester.

**[Note 2]**

External exposure metal: Antenna terminal
Earphone jack

# HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

# IMPORTANT SAFEGUARDS

1. **READ INSTRUCTIONS**
   All the safety and operating instructions should be read before the unit is operated.
2. **RETAIN INSTRUCTIONS**
   The safety and operating instructions should be retained for future reference.
3. **HEED WARNINGS**
   All warnings on the unit and in the operating instructions should be adhered to.
4. **FOLLOW INSTRUCTIONS**
   All operating and use instructions should be followed.
5. **CLEANING**
   Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **ATTACHMENTS**
   Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.
7. **WATER AND MOISTURE**
   Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
8. **ACCESSORIES**
   Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

**8A.** An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

9. **VENTILATION**
   Slots and openings in the cabinet and in the back or bottom are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. **POWER SOURCES**
    This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.
11. **GROUNDING OR POLARIZATION**
    This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. If your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, this plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12. **POWER-CORD PROTECTION**
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. **LIGHTNING**
    To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.
14. **POWER LINES**
    An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
15. **OVERLOADING**
    Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.
16. **OBJECT AND LIQUID ENTRY**
    Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.
17. **OUTDOOR ANTENNA GROUNDING**
    If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
18. **SERVICING**
    Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

# IMPORTANT SAFEGUARDS (CONTINUED)

**19. DAMAGE REQUIRING SERVICE**

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power-supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the unit.
c. If the unit has been exposed to rain or water.
d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
e. If the unit has been dropped or the cabinet has been damaged.
f. When the unit exhibits a distinct change in performance, this indicates a need for service.

**20. REPLACEMENT PARTS**

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original parts.
Unauthorized substitutions may result in fire, electric shock or other hazards.

**21. SAFETY CHECK**

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

**22. WALL OR CEILING MOUNTING**

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

**23. HEAT**

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

**24. DISC TRAY**

Keep your fingers well clear of the disc tray as it is closing. It may cause serious personal injury.

**25. CONNECTING**

When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause an electric shock and serious personal injury. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

**26. SOUND VOLUME**

Reduce the volume to the minimum level before you turn on the product. Otherwise, sudden high volume sound may cause hearing or speaker damage.

**27. SOUND DISTORTION**

Do not allow the product output distorted sound for a longtime. It may cause speaker overheating and fire.

**28. HEADPHONES**

When you use the headphones, keep the volume at a moderate level. If you use the headphones continuously with high volume sound, it may cause hearing damage.

**29. LEASER BEAM**

Do not look into the opening of the disc tray or ventilation opening of the product to see the source of the laser beam. It may cause sight damage.

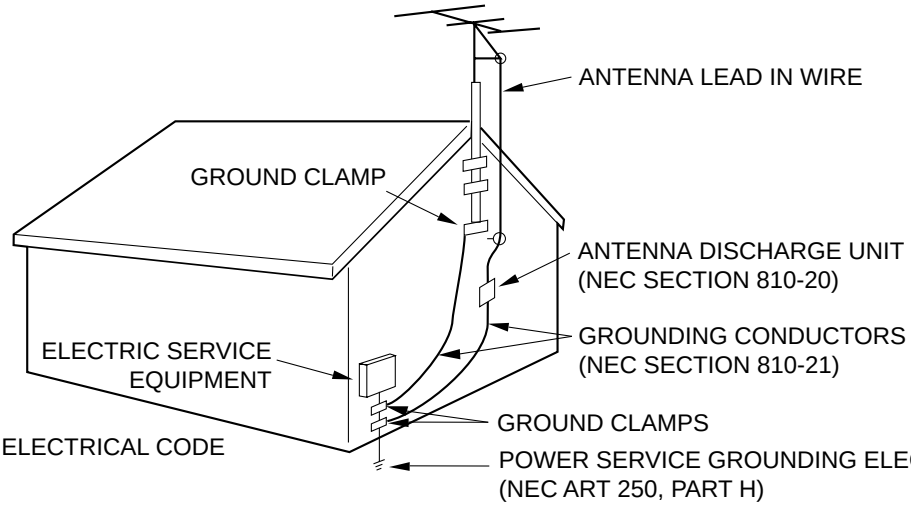
**30. DISC**

Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

**31. NOTE TO CATV SYSTEM INSTALLER**

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE




NEC-NATIONAL ELECTRICAL CODE

S2898A

## DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and TV/DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Rotate the white gear of Deck CD section in the direction of the arrow by hand, remove the disc from Deck CD. **(Refer to Fig. 1)**

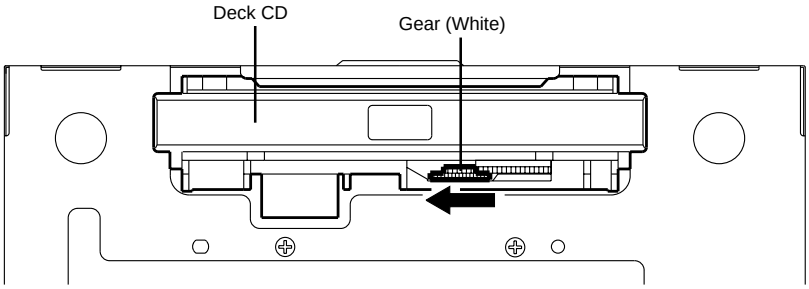



**Fig. 1**

# PARENTAL CONTROL - RATING LEVEL

## 4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Confirm that no sisc on the disc tray.
3. Press and hold the '7' key on the remote control unit.
4. Simultaneously press and hold the 'STOP' key on the front panel.
5. Hold both keys for more than 3 seconds.
6. The On Screen Display message 'Initialize' will appear.
7. The 4 digit password has now been cleared.

**NB:** The above procedure will reset ALL of the player's settings to the default factory state.

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# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **G-1** | **TV System** | CRT | CRT Size / Visual Size | | 9 Inch / 228.6 mmV |
| | | | CRT Type | | Normal |
| | | | Deflection | | 90 degree |
| | | | Magnetic Field BV/BH | | +0.45G/0.18G |
| | | Color System | | | NTSC |
| | | Speaker | | | 2 Speaker |
| | | | Position | | Side |
| | | | Size | | 3 Inch |
| | | | Impedance | | 8 Ohm |
| | | Sound Output | Max | | 1.2+1.2 W |
| | | | 10%(Typical) | | 0.8+0.8 W |
| **G-2** | **DVD System** | Color System | | | NTSC |
| | | Disc | | | DVD Video,CD-DA,CD-R |
| | | Disc Diameter | | | 120 mm , 80 mm |
| | | Deck | Disc Loading System | | Front Loading |
| | | | Motor | | 3 Motors |
| | | Pick up | | | 1-Lens 2-Beams System |
| | | Playback time(Max) | DVD 1-Layer | | 135min (4.7GB) |
| | | | DVD 2-Layer | | 245min (8.5GB) |
| | | | CD | | 74min |
| | | | VIDEO CD | | --min |
| | | Search speed | | | Fwd 2-20 times |
| | | | | Actual | 2-45 times |
| | | | | | Rev 2-20 times |
| | | | | Actual | 2-45 times |
| | | Slow speed | | | Fwd 1/7-1/2 times |
| | | | | Actual | -- |
| | | | | | Rev 1/7 -1/2 times |
| | | | | Actual | 1-2 times |
| **G-3** | **Tuning System** | Broadcasting System | | | US System M |
| | | Tuner and Receive CH | System | | 1Tuner |
| | | | Channel Tuner | | Others |
| | | | Tuning System | | F-Synth |
| | | | Input Impedance | | VHF/UHF 75 Ohm |
| | | | CH Coverage | | 2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84 |
| | | Intermediate Frequency | Picture(FP) | | 45.75MHz |
| | | | Sound(FS) | | 41.25MHz |
| | | | FP-FS | | 4.50MHz |
| | | Preset CH | | | -- |
| | | Stereo/Dual TV Sound | | | Yes |
| | | NTSC Playback (PAL60) | | | No |
| **G-4** | **Power** | Power Source | AC | | 120V, 60Hz |
| | | | DC | | 12V |
| | | Power Consumption | | at AC | 55W at 120V 60Hz |
| | | | | at DC | 55W at 12V |
| | | | Stand by (at AC) | | 8 W at 120V 60Hz |
| | | | Per Year | | -- kWh/Year |
| | | Power Supply Cord | | | UL |
| | | Protector | Power Fuse | | Yes |
| **G-5** | **Signal** | Video Signal | Input Level | | 1 V p-p/75 ohm |
| | | | Output Level | | 1 V p-p/75 ohm |
| | | | S/N Ratio (Weighted) | | 65dB |
| | | | Horizontal Resolution at DVD Mode | | 400 Lines (TV Monitor)<br>500 Lines ( Video Out) |
| | | RGB Signal | Output Level | | -- V p-p/75 ohm |
| | | Audio Signal | Input Level | | RCA -8.0dB/50Kohm |
| | | | Output Level | | RCA -8.0dB/1Kohm |
| | | | S/N Ratio at DVD (Weighted) | | 90 dB |
| | | | Harmonic Distortion | | 0.01% (1KHz) |
| | | | Frequency Response : | at DVD | 4Hz - 22KHz |
| | | | | at VIDEO CD | -- |
| | | | | at CD | 4Hz - 20KHz |
| | | Digital Audio Signal | Output Level | | 0.5 V p-p/75 ohm |

# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **G-6** | **Interface** | Switch | Front | Power (Tact) | Yes |
| | | | | Channel Up | Yes |
| | | | | Channel Down | Yes |
| | | | | Volume Up | Yes |
| | | | | Volume Down | Yes |
| | | | | Play | Yes |
| | | | | Open/Close | Yes |
| | | | | Skip(>>) | Yes |
| | | | | Skip(<<) | Yes |
| | | | | Still/Pause | No |
| | | | | Stop | Yes |
| | | | | Main Power SW | No |
| | | | Rear | AC/DC | No |
| | | | | Color On/Off (SECAM Only) | No |
| | | | | Degauss | No |
| | | | | Main Power SW | No |
| | | Indicator | | Power | Red |
| | | | | Stand-by | No |
| | | | | On Timer | No |
| | | Terminals | Front | Video Input | Yes |
| | | | | Audio Input | Yes (Stereo) |
| | | | | Other Terminal | Head Phone |
| | | | Rear | Video Input(Rear1) | No |
| | | | | Video Input(Rear2) | No |
| | | | | Audio Input(Rear1) | No |
| | | | | Audio Input(Rear2) | No |
| | | | | Video Output | Yes |
| | | | | Audio Output | Yes (Stereo) |
| | | | | Euro Scart | No |
| | | | | Digital Audio Output | Coaxial |
| | | | | Optical Audio Output | No |
| | | | | Color Stream | No |
| | | | | Diversity | No |
| | | | | Ext Speaker | No |
| | | | | DC Jack 12V(Center +) | Yes |
| | | | | VHF/UHF Antenna Input | F Type |
| | | | | AC Outlet | No |
| **G-7** | **Set Size** | | | Approx. W x D x H (mm) | 278.0x306.5x311.5 |
| **G-8** | **Weight** | | | Net (Approx.) | 8.0kg (17.6lbs) |
| | | | | Gross (Approx.) | 9.1kg (20.1lbs) |
| **G-9** | **Regulation** | | | Safety | UL |
| | | | | Radiation | FCC |
| | | | | X-Radiation | DHHS |
| **G-10** | **Temperature** | | | Operation | 5oC ~ 40oC |
| | | | | Storage | -20oC ~ 60oC |
| **G-11** | **Operating Humidity** | | | | Less than 80% RH |

# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| G-12 | **On Screen Display** | Menu(TV) | | | Yes |
| | | | Menu Type | | Icon |
| | | | Picture | | Yes |
| | | | | Contrast | Yes |
| | | | | Brightness | Yes |
| | | | | Color | Yes |
| | | | | Tint | Yes |
| | | | | Sharpness | Yes |
| | | | Sound | | No |
| | | | | Bass | No |
| | | | | Treble | No |
| | | | | Balance | No |
| | | | CH | | Yes |
| | | | | Auto Tuning | Yes |
| | | | | Manual Tuning | Yes |
| | | | | CATV | Yes |
| | | | Option | | Yes |
| | | | | Language | Yes |
| | | | | V-Chip | Yes |
| | | Clock | | | No |
| | | Clock Set | | | No |
| | | On/Off Timer | | | No |
| | | Sleep Timer | | | Yes |
| | | CH/AV/DVD | | | Yes |
| | | Stereo, Audio Output, Bilingual | | | No |
| | | Stereo, Audio Output, SAP(Stereo Only) | | | Yes |
| | | Stereo, Audio Output | | | No |
| | | Sound 1/2 | | | No |
| | | SAP (Stereo Only) | | | Yes |
| | | NICAM Auto Off | | | No |
| | | Closed Caption | | | Yes |
| | | System Select | | | No |
| | | Area Code | | | No |
| | | Pin Code Registration | | | No |
| | | Pin Code | | | No |
| | | DVD RGB /Composite | | | No |
| | | Game | | | Yes |
| | | Hotel Lock | | | No |
| | | Volume | | | Yes |
| | | Sound Mute | | | No |
| | **On Screen Display** | Menu(DVD) | | | Yes |
| | | | Menu Type | | Character |
| | | | Rating Level | | Yes |
| | | | Audio | | Yes |
| | | | Sub Title | | Yes |
| | | | TV Screen Size | | Yes |
| | | | OSD Display On/Off | | Yes |
| | | | Menu Language | | Yes |
| | | | Audio Output | | No |
| | | | Set Up Language | | Yes |
| | | | Password Lock/Unlock | | Yes |
| | | Open | | | Yes |
| | | Close | | | Yes |
| | | No disc | | | Yes |
| | | Reading | | | Yes |
| | | Play | | | Yes |
| | | Still/Pause | | | Yes |
| | | Stop | | | Yes |
| | | Prohibit Mark | | | Yes |
| | | Step | | | Yes |
| | | Next | | | Yes |
| | | Back | | | Yes |
| | | Random | | | Yes(CD Only) |
| | | Repeat | | | Yes |
| | | Slow+ ## | | | Yes |
| | | Slow- ## | | | Yes |
| | | Search+ ## | | | Yes |
| | | Search- ## | | | Yes |
| | | Jump | | | Yes |
| | | Resume | | | Yes |
| | | Title No. | | | Yes |
| | | Chapter No. | | | Yes |
| | | Track No. | | | Yes |
| | | Time | | | Yes |
| | | Sub Title No. | | | Yes |
| | | Angle No. | | | Yes |
| | | Vocal On/Off | | | Yes |
| | | Audio No. | | | Yes |
| | | Audio Stereo L/R | | | No |
| | | Zoom | | | Yes |
| | | Marker No. | | | No |
| | | Program Play Back | | | Yes(CD Only) |
| G-13 | **OSD Language** | (TV) | | | Eng, Fre, Spa |
| | | (DVD) | | | Eng, Fre, Spa |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-14** | **Remote Control** | Unit | | RC-EF |
| | | Glow in Dark Remocon | | Yes |
| | | Format | | NEC |
| | | Custom Code | | 71-8E h |
| | | Power Source | Voltage(D.C)<br>UM size x pcs | 3V<br>UM-4 x 2 pcs |
| | | Total Keys | | 45 Keys |
| | | Keys | Power | Yes |
| | | | 1 | Yes |
| | | | 2 | Yes |
| | | | 3 | Yes |
| | | | 4 | Yes |
| | | | 5 | Yes |
| | | | 6 | Yes |
| | | | 7 | Yes |
| | | | 8 | Yes |
| | | | 9 | Yes |
| | | | 0 | Yes |
| | | | Open/Close | No |
| | | | Play | Yes |
| | | | Stop | Yes |
| | | | Search+ | Yes |
| | | | Search- | Yes |
| | | | Skip+ | Yes |
| | | | Skip- | Yes |
| | | | Slow+ | Yes |
| | | | Slow- | Yes |
| | | | Still/Pause | Yes |
| | | | Display/Call | Yes |
| | | | TV/DVD | Yes |
| | | | Clear/Reset | Yes |
| | | | Audio/Audio Sel. | Yes |
| | | | Angle | Yes |
| | | | Subtitle | Yes |
| | | | Subtitle On/Off | No |
| | | | Title | Yes |
| | | | Set up/TV Menu <TV MENU> | Yes |
| | | | Return | Yes |
| | | | Menu DVD <SET UP> | Yes |
| | | | Up/ Set+/ CH Up | Yes |
| | | | Down/ Set-/ CH Down | Yes |
| | | | Left/Select- | Yes |
| | | | Right/Select+ | Yes |
| | | | Select/Enter | Yes |
| | | | Play Mode | Yes |
| | | | Closed Caption | Yes |
| | | | Input | Yes |
| | | | Volume+ | Yes |
| | | | Volume- | Yes |
| | | | Repeat A-B | Yes |
| | | | Zoom/ Quick View | Yes |
| | | | Mute | No |
| | | | Sleep | Yes |
| | | | Jump | Yes |
| | | | Text/Mix/TV | No |
| | | | Game | Yes |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-15** | **Features** | Auto Degauss | | Yes |
| | | Auto Shut Off | | Yes |
| | | Auto Power On, Auto Play | | No |
| | | Canal+ | | No |
| | | CATV | | Yes |
| | | Anti-theft | | No |
| | | Rental | | No |
| | | Memory(Last CH) | | Yes |
| | | Memory(Last Volume) | | Yes |
| | | V-Chip | | Yes |
| | | | Type | -- |
| | | BBE | | No |
| | | Fast Text | | No |
| | | UniText | | No |
| | | Top Text | | No |
| | | Auto Search | | No |
| | | CH Allocation | | No |
| | | SAP | | Yes |
| | | Channel Lock | | No |
| | | Just Clock Function | | No |
| | | Game Position | | Yes |
| | | CH Label | | No |
| | | VM Circuit | | No |
| | | Area Code | | No |
| | | FM Transmitter | | No |
| | | Energy Star | | No |
| | | TV Monitor | | No |
| | | Closed Caption | | Yes |
| | | Full OSD | | Yes |
| | | Premiere | | No |
| | | Comb Filter | | No |
| | | | | -- Lines |
| | | Parental Lock (DVD Only) | | Yes |
| | | Auto CH Memory | | Yes |
| | | Hotel Lock | | No |
| | | Stable Sound | | No |
| | | Favorite CH | | No |
| | | Digital Out | (Dolby Digital) | Yes |
| | | | (PCM) | Yes |
| | | | (DTS) | Yes |
| | | Down Mix Out | (Dolby Digital) | Yes |
| | | Self Diagnostic | | No |
| | | MP3 Playback | | No |
| **G-16** | **Accessories** | Owner's Manual | Language | Eng |
| | | | w/Guarantee Card | Yes |
| | | Guarantee Card | | No |
| | | Registration Card(NDL Card) | | No |
| | | Registration Card | | Yes |
| | | Warranty Card | | No |
| | | Information Sheet | | No |
| | | ESP Card | | No |
| | | Toll Free Insert Sheet | | No |
| | | Warning Sheet | | No |
| | | Survice Information Sheet | | No |
| | | Quick Set-up Sheet | | No |
| | | Euro Warranty Information Sheet | | No |
| | | Dew/AHC Caution Sheet | | No |
| | | PTB Sheet | | No |
| | | Circuit Diagram | | No |
| | | Service Facility List | | No |
| | | Service Station List | | No |
| | | Inportant Safeguard | | No |
| | | Remote Control Unit | | Yes |
| | | Rod Antenna | | No |
| | | | Poles | No |
| | | | Terminal | -- |
| | | Loop Antenna | | No |
| | | | Terminal | -- |
| | | 75 Ohm Coaxial Cable | | No |
| | | | | -- |
| | | 21pin Cable | | No |
| | | U/V Mixer | | No |
| | | Channel Film | | No |
| | | Battery | | Yes |
| | | | UM size x pcs | UM-4 x 2 pcs |
| | | | OEM Brand | No |
| | | DC Car Cord (Center+) | | Yes |
| | | AC Cord | | No |
| | | AV Cord (2Pin-1Pin) | | No |
| | | AC Plug Adaptor | | No |
| | | Safety Tip | | No |
| | | Anntena Change Plug | | No |
| | | 300 ohm to 75 ohm Antenna Adapter | | Yes |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-17** | **Carton** | Master Carton | | No |
| | | | Content | --- Sets |
| | | | Material | --- / --- |
| | | | Dimensions W x D x H(mm) | --- |
| | | | Description of Origin | --- |
| | | Gift Box | | Yes |
| | | | Material | Double/White |
| | | | W/Color Phote Label | No |
| | | | Dimensions W x D x H(mm) | 338x376x386 |
| | | | Design | As Per Buyer 's |
| | | | Description of Origin | Yes |
| | | Drop Test | | Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces |
| | | | Height (cm) | 62 |
| | | Container Stuffing | | 1260 Sets/40' container |
| **G-18** | **Cabinet Material** | | Cabinet Front | PS, 94V0 |
| | | | Cabinet Rear | PS, 94V0 |

# DISASSEMBLY INSTRUCTIONS

## 1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

### 1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 4 screws ①.
2. Remove the 2 screws ②.
   Remove the 2 screws ③ which are used for holding the Back Cabinet.
3. Remove the Back Cabinet in the direction of arrow.

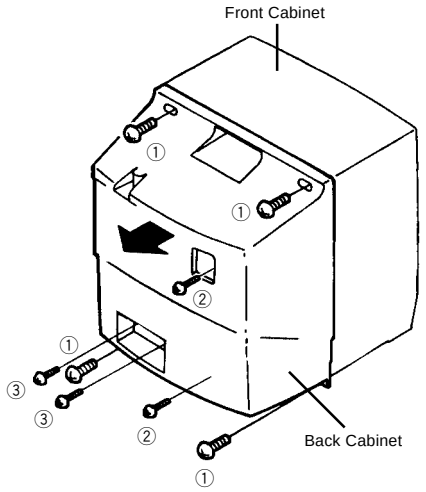



Fig. 1-1

### 1-2: CRT PCB (Refer to Fig. 1-2)

**CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.**

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connectors:
   (CP801 and CP850B).
3. Remove the CRT PCB in the direction of arrow.

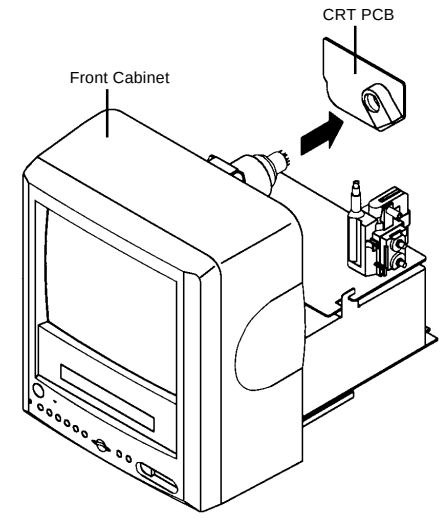



Fig. 1-2

### 1-3: TV/DVD BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors:
   (CP301, CP302, CP401 and CP403).
3. Remove the TV/DVD Block in the direction of arrow.

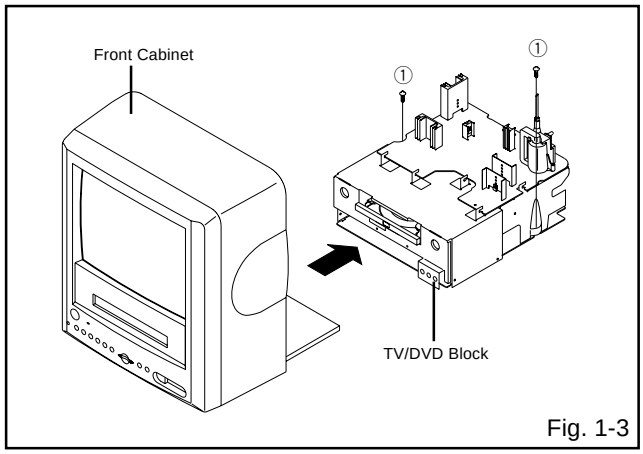



Fig. 1-3

### 1-4: MAIN PCB (Refer to Fig. 1-4)

1. Remove the screw ①.
2. Remove the Main PCB Holder.
3. Remove the screw ②.
4. Remove the 2 screws ③.
5. Remove the 2 screws ④.
6. Disconnect the following connectors:
   (CP810B, CP820B, CP811 and CP402).
7. Remove the Main PCB in the direction of arrow.

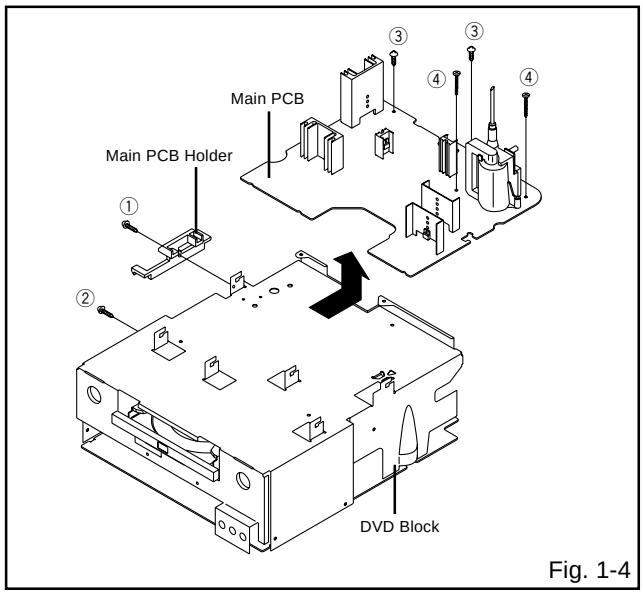



Fig. 1-4

# DISASSEMBLY INSTRUCTIONS

**1-5: FRONT TRAY PLATE/TOP SHIELD**
**(Refer to Fig. 1-5)**

1. Unlock the 2 supports ①.
2. Remove the Front Tray Plate in the direction of arrow (A).
3. Remove the 14 screws ②.
4. Remove the Top Shield in the direction of arrow (B).

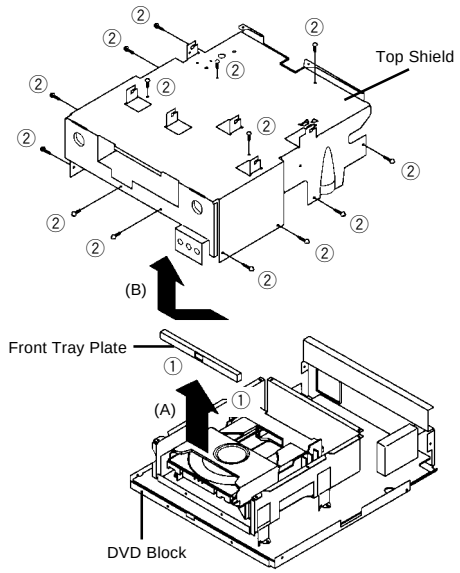



Fig. 1-5

**1-6: AV PCB/SYSCON PCB/CD DECK (Refer to Fig. 1-6)**

1. Remove the screw ①.
2. Remove the Bush Holder in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the AV PCB in the direction of arrow (B).
5. Remove the 4 screws ③.
6. Remove the Angle Deck in the direction of arrow (C).
   Disconnect the following connectors:
7. (CP4001 and CP4002).
8. Remove the 4 screws ④.
9. Remove the CD Deck in the direction of arrow (D).
10. Remove the 4 screws ⑤.
11. Remove the Syscon PCB in the direction of arrow (E).

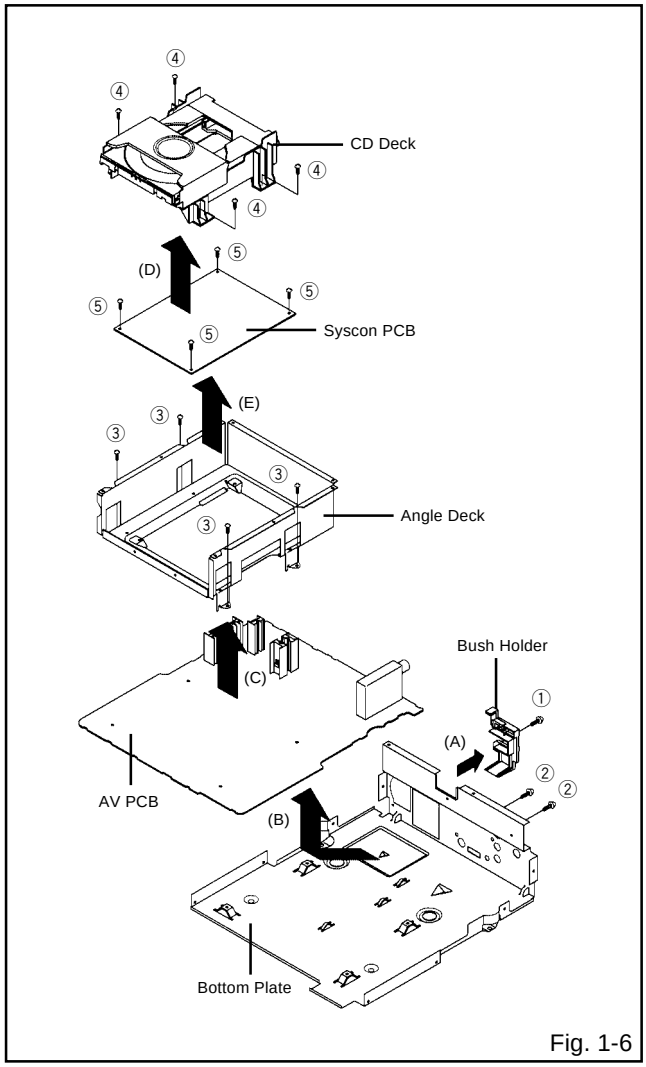



Fig. 1-6

# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

**REMOVAL**

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 2-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

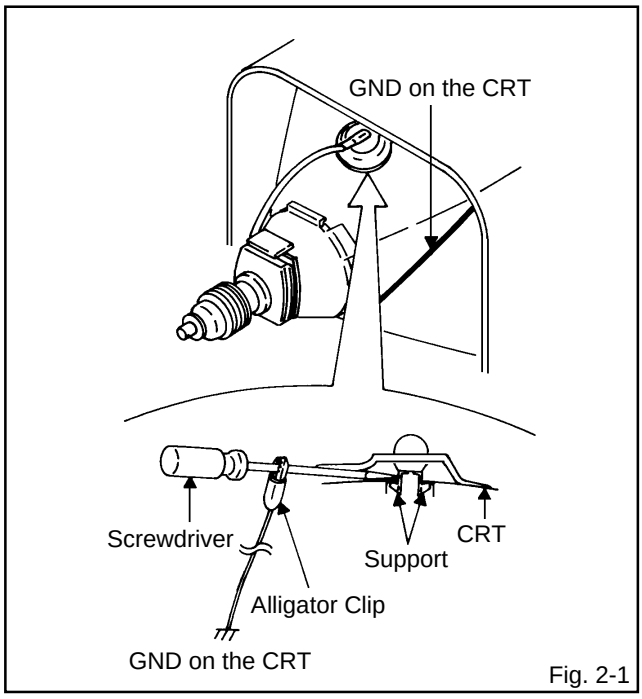


Fig. 2-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 2-2.)**

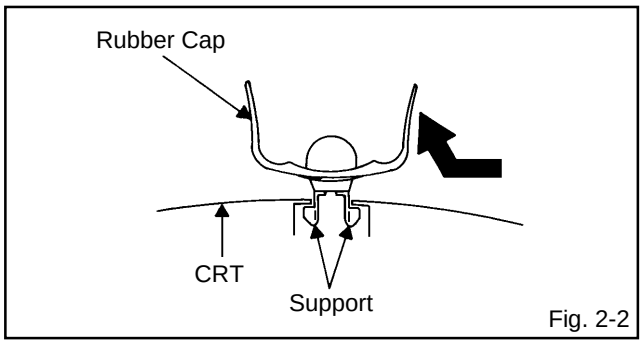


Fig. 2-2

3. After one side is removed, pull in the opposite direction to remove the other.

**NOTE**

Take care not to damage the Rubber Cap.

**INSTALLATION**

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 2-3.)**

**NOTE**

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

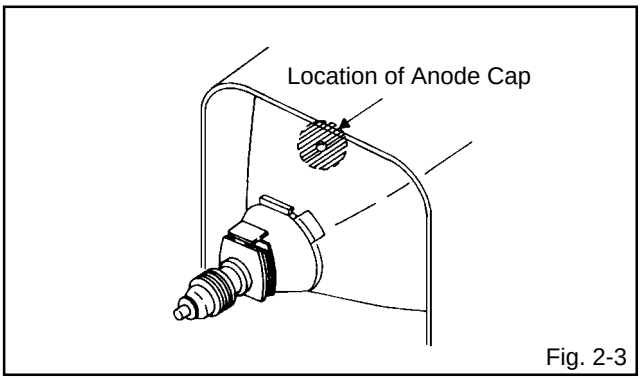


Fig. 2-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 2-4.)**

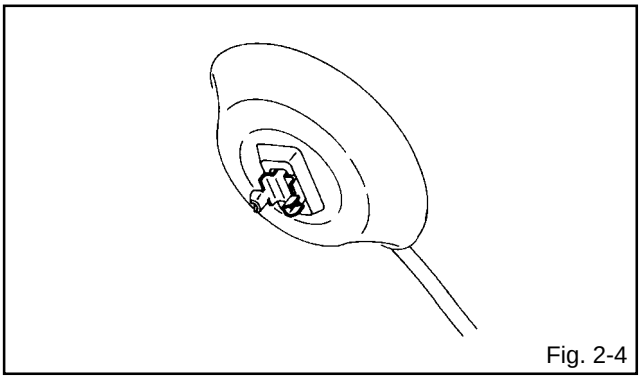


Fig. 2-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 2-5**.

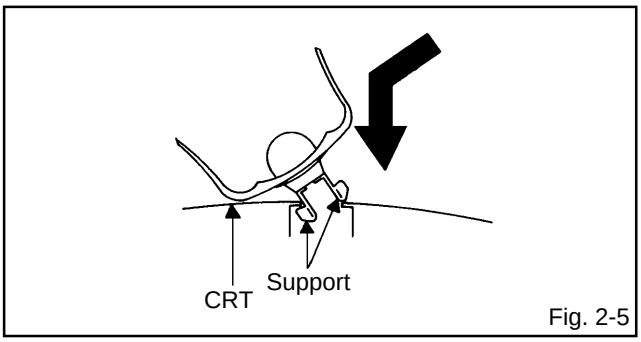


Fig. 2-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

# DISASSEMBLY INSTRUCTIONS

## 3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

**REMOVAL**

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 3-1.)**

   **NOTE**

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

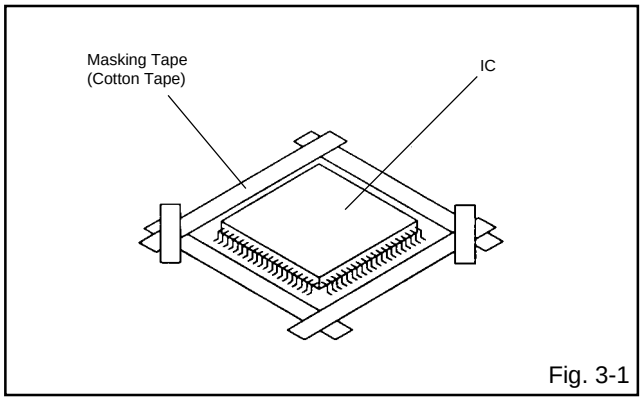


Fig. 3-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 3-2.)**

   **NOTE**

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

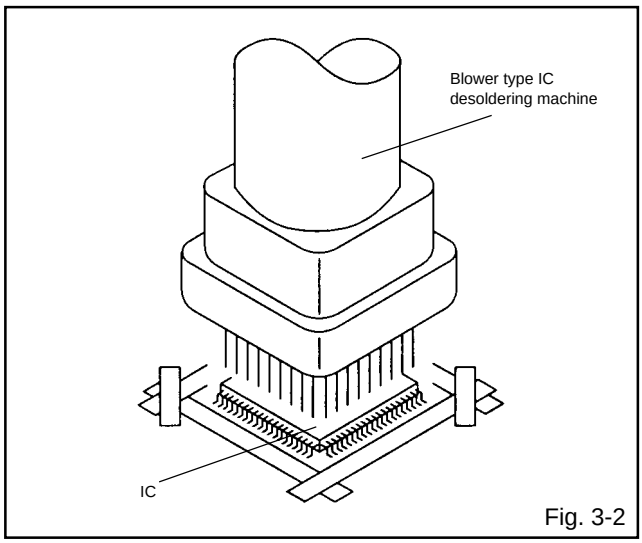


Fig. 3-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 3-3.)**

   **NOTE**

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

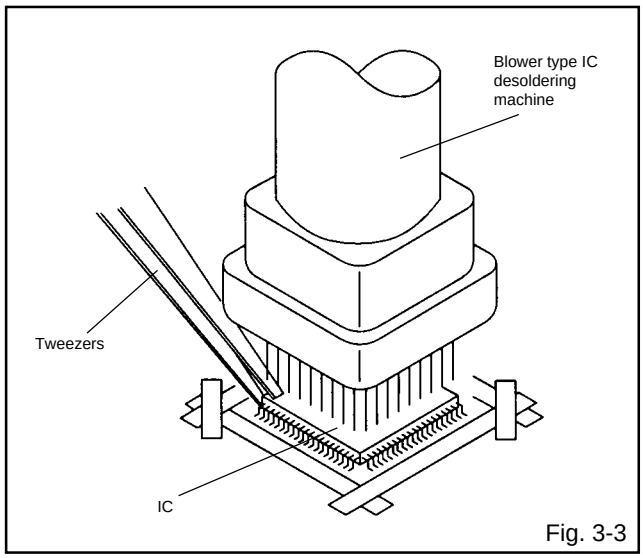


Fig. 3-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 3-4.)**

   **NOTE**

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

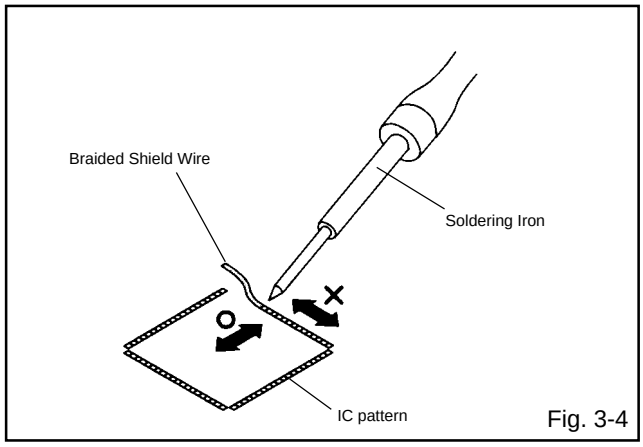


Fig. 3-4

# DISASSEMBLY INSTRUCTIONS

**INSTALLATION**

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**

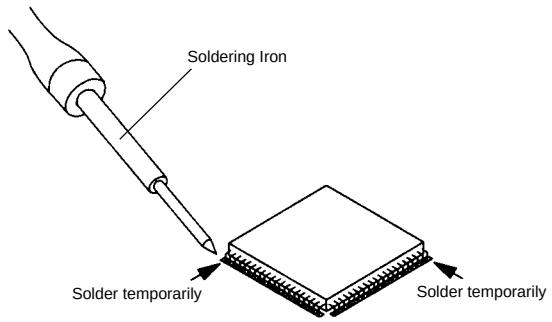



Fig. 3-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**

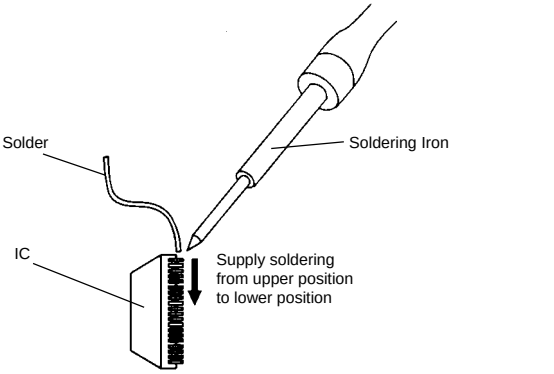



Fig. 3-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

   **NOTE**

   Do not absorb the solder to excess.

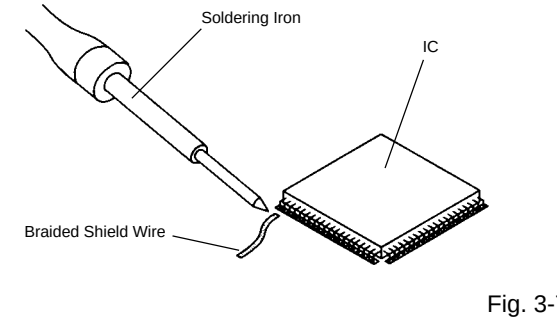



Fig. 3-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**

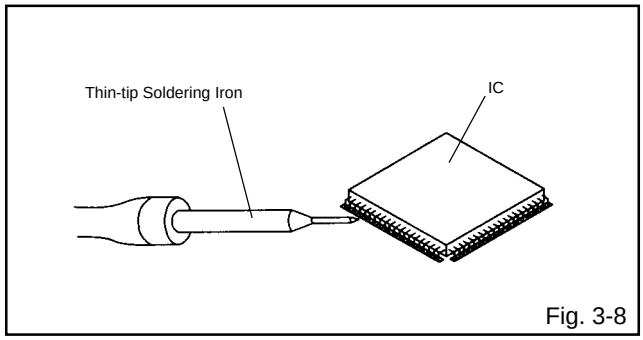



Fig. 3-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   **NOTE**

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

# SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a standard time (second).

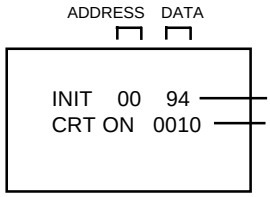
| Set Key | Remocon Key | Standard Time (seconds) | Operations |
|---|---|---|---|
| VOL. (-) MIN | 0 | 1 | Releasing of V-CHIP PASSWORD. |
| VOL. (-) MIN | 1 | 1 | Initialization of the factory on TV.<br>NOTE: Do not use this for the normal servicing.<br>If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours. |
| VOL. (-) MIN | 3 | 1 | Initialization of the factory on DVD.<br>NOTE: Do not use this for the normal servicing.<br>The function will only work without the setting of DVD disc at DVD mode.<br>While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously. |
| VOL. (-) MIN | 6 | 1 | POWER ON total hours and PLAY/REC total hours are displayed on the screen.<br>Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED).<br><br>Can be checked of the INITIAL DATA of MEMORY IC.<br>Refer to the "WHEN REPLACING EEPROM (MEMORY) IC". |
| VOL. (-) MIN | 8 | 1 | Writing of EEPROM initial data.<br>NOTE: Do not use this for the normal servicing. |
| VOL. (-) MIN | 9 | 1 | Display of the Adjustment MENU on the screen.<br>Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment). |
| STOP | 7 | 3 | Releasing of PARENTAL LOCK.<br>Refer to the “PARENTAL CONTROL - RATING LEVEL”.<br>NOTE: The function will only work without the setting of DVD disc at DVD mode. |

# CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

**NOTE: If you set a factory initialization, the total hours is reset to "0".**

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.




Initial setting content of MEMORY IC.
POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

**FIG. 1**

# WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

**Note:** No need setting for the position of the mark @ due to the adjustment value.

| INI | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +A | +B | +C | +D | +E | +F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | 94 | 43 | 00 | 31 | E1 | B3 | 27 | D5 | 01 | 40 | C9 | 40 | 40 | 40 | 00 | 02 |
| 10 | 04 | 06 | 08 | 0A | 0C | 0E | 10 | 13 | 16 | 19 | 1C | 1F | 21 | 23 | 25 | 27 |
| 20 | 29 | 2B | 2C | 2D | 2E | 2F | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| 30 | 3A | 3B | 3C | 3D | 3E | 3F | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 |
| 40 | 4A | 4B | 4D | 4F | 51 | 55 | 5A | 60 | 65 | 6A | 70 | 75 | 7A | 7F | @ | @ |
| 50 | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ |
| 60 | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | @ | 10 | --- | --- | --- | --- |

**Table 1**

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second. ADDRESS and DATA should appear as FIG 1.

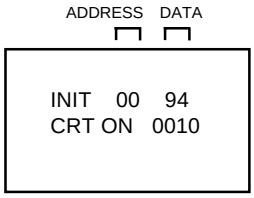


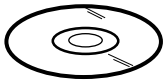

**FIG. 1**

3. ADDRESS is now selected and should "blink". Using the VOL. UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. UP/DOWN button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

# SERVICING FIXTURES AND TOOLS

JG175A DVD Test Disc
(A-BEX TDV-540)



| Ref. No. | Part No. | Parts Name | Remarks |
|---|---|---|---|
| JG175A | APJG175A00 | DVD Test Disc (A-BEX TDV-540) | Tint adjustment of DVD mode |

# ELECTRICAL ADJUSTMENTS

## 1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

**CAUTION**

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

**Prepare the following measurement tools for electrical adjustments.**

1. Oscilloscope
2. Digital Voltmeter
3. AC Voltmeter
4. Pattern Generator
5. Multi-Sound Signal Generator

**On-Screen Display Adjustment**

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

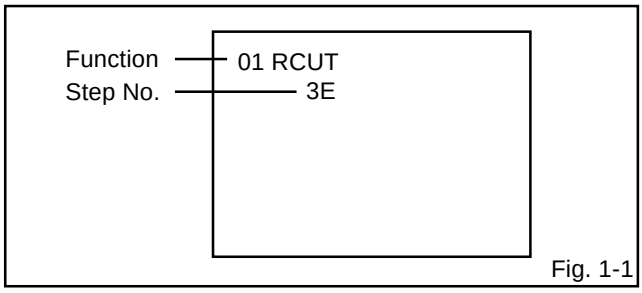


Fig. 1-1

2. Use the Channel UP/DOWN button or Channel button **(1-0)** on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

| NO. | FUNCTION | NO. | FUNCTION |
|---|---|---|---|
| 01 | R CUT OFF | 37 | BRI. AV(CENT.) |
| 02 | G CUT OFF | 38 | BRI. AV(MAX) |
| 03 | B CUT OFF | 39 | BRI. AV(MIN) |
| 04 | G DRIVE | 40 | COL. AV(CENT.) |
| 05 | B DRIVE | 41 | COL. AV(MAX) |
| 06 | BRIGHTNESS(CENT.) | 42 | COL. AV(MIN) |
| 07 | BRIGHTNESS(MAX) | 43 | TINT AV |
| 08 | BRIGHTNESS(MIN) | 44 | SUB CONTRAST AV |
| 09 | COLOR(CENT.) | 45 | CONT. AV(CENT.) |
| 10 | COLOR(MAX) | 46 | CONT. AV(MAX) |
| 11 | COLOR(MIN) | 47 | CONT. AV(MIN) |
| 12 | TINT | 48 | SHARPNESS AV |
| 13 | SUB CONTRAST | 49 | BRI. DVD(CENT.) |
| 14 | CONTRAST(CENT.) | 50 | BRI. DVD(MAX) |
| 15 | CONTRAST(MAX) | 51 | BRI. DVD(MIN) |
| 16 | CONTRAST(MIN) | 52 | COL. DVD(CENT.) |
| 17 | SHARPNESS | 53 | COL. DVD(MAX) |
| 18 | RGB CONTRAST | 54 | COL. DVD(MIN) |
| 19 | H POSITION | 55 | TINT DVD |
| 20 | V POSITION | 56 | SUB CONTRAST DVD |
| 21 | V SIZE | 57 | CONT. DVD(CENT.) |
| 22 | V LINEARITY | 58 | CONT. DVD(MAX) |
| 23 | V S CORRECTION | 59 | CONT. DVD(MIN) |
| 24 | EW PARABOLA CORR. | 60 | SHARPNESS DVD |
| 25 | EW TRAPEZIUM CORR. | 61 | BRI. GAME(CENT.) |
| 26 | H SIZE | 62 | BRI. GAME(MAX) |
| 27 | V EHT | 63 | BRI. GAME(MIN) |
| 28 | H EHT | 64 | CONT. GAME(CENT.) |
| 29 | RF AGC | 65 | CONT. GAME(MAX) |
| 30 | V CENTERING | 66 | CONT. GAME(MIN) |
| 31 | CORNER CORR. TOP | 67 | TUNING V MUTE |
| 32 | CORNER CORR. BTM | 68 | POWER ON V MUTE |
| 33 | OSD H | 69 | INPUT LEVEL |
| 34 | FM LEVEL | 70 | SEPARATION L |
| 35 | TEST PWM | 71 | SEPARATION H |
| 36 | TEST TONE CONTROL | 72 | CUT OFF |

Fig. 1-2

## 2. BASIC ADJUSTMENTS

**2-1: CONSTANT VOLTAGE**

1. Input DC12V to DC Jack and turn the Power ON.
2. Connect the digital voltmeter to the **TP401**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR501** until the digital voltmeter is 101 ± 0.5V.
5. Input AC100V to AC cord, and then remove the DC Jack cord.
6. Adjust the **VR502** until the digital voltmeter is 102 ± 0.5V.

**2-2: RF AGC**

1. Receive the VHF HIGH (63dB).
2. Place the set with Aging Test for more than 15 minutes.
3. Connect the digital voltmeter between the **pin 5 of CP101** and the **pin 1 of CP101**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(29)** on the remote control to select "AGC".
5. Press the RIGHT/LEFT button on the remote control until the digital voltmeter is 2.6 ± 0.05V.

**2-3: CUT OFF**

1. Place the set with Aging Test for more than 15 minutes.
2. Set condition is AV MODE without signal.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(72)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

# ELECTRICAL ADJUSTMENTS

### 2-4: WHITE BALANCE

**NOTE:** Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "G DRV".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT", "G CUT", "B CUT", "G DRV" or "B DRV".
6. Adjust the RIGHT/LEFT button on the remote control to whiten the R CUT, G CUT, B CUT, G DRV, and B DRV at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

### 2-5: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

### 2-6: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(19)** on the remote control to select "HPOSI".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

### 2-7: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "VPOSI".
4. Press the RIGHT/LEFT button on the remote control until the horizontal line becomes fit to the notch of the shadow mask.

### 2-8: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(21)** on the remote control to select "VSIZE".
4. Press the RIGHT/LEFT button on the remote control until the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.

### 2-9: VERTICAL LINEARITY

**NOTE:** Adjust after performing adjustments in section 2-8. After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "VLIN".
4. Press the RIGHT/LEFT button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

### 2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(33)** on the remote control to select "OSD".
2. Press the RIGHT/LEFT button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

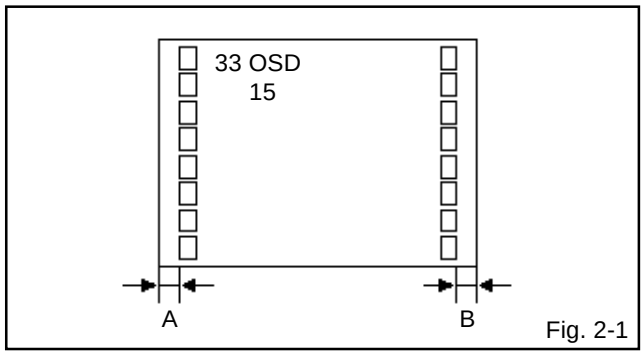


Fig. 2-1

### 2-11: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to **TP901**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(69)** on the remote control to select "LVL".
4. Press the RIGHT/LEFT button on the remote control until the AC voltmeter is 75 ± 2mV.

# ELECTRICAL ADJUSTMENTS

### 2-12: SEPARATION

**Please do the method (1) or method (2) adjustment.**

**Method (1)**

1. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(70)** on the remote control to select “SEPAL”.
5. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the audio output wave becomes a fine sine wave.

**Method (2)**

1. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(70)** on the remote control to select “SEPAL”.
5. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the RIGHT/LEFT button on the remote control to adjust it until the R-ch output becomes minimum.
8. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF signal.
9. Connect the oscilloscope to the **Audio Out Jack (L-ch)**. Then perform the above adjustments 3~7.

### 2-13: SUB BRIGHT CENTER

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(06)** on the remote control to select "BRTC".
4. Press the RIGHT/LEFT button on the remote control to adjust to the point just before the white 5% begin to shine.
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode.
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(37)** on the remote control to select "BRTCA".
9. Press the RIGHT/LEFT button on the remote control to adjust to the point just before the white 5% begin to shine.
10. Press the TV/DVD button on the remote control to set to the DVD mode.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(49)** on the remote control to select "BRTCD".
12. Press the RIGHT/LEFT button on the remote control to set the same step numbers as the AV.
13. Press the GAME button on the remote control to set to the GAME mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(61)** on the remote control to select "BRTCG".
15. Press the RIGHT/LEFT button on the remote control to decrease the step numbers by 16 steps to the AV.

# ELECTRICAL ADJUSTMENTS

### 2-14: SUB TINT CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP803**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "TNTC".
5. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness, contrast, color and tint to normal position.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(43)** on the remote control to select "TNTCA".
10. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
11. Press the TV/DVD button on the remote control to set to the DVD mode.
12. Playback the Title2 (color bar pattern) of **JG175A**.
13. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(55)** on the remote control to select "TNTCD".
14. Press the RIGHT/LEFT button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**

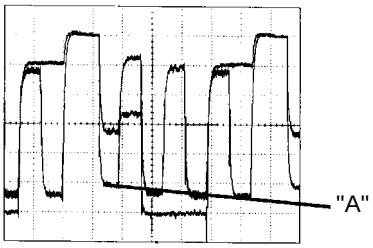



Fig. 2-2

### 2-15: SUB COLOR CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP801**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "COLC".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 110 ± 5% of the white level. **(Refer to Fig. 2-3)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode.
9. Using the remote control, set the brightness, contrast, color and tint to normal position.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(40)** on the remote control to select "COLCA".
11. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
12. Press the RIGHT/LEFT button on the remote control until the red color level is adjusted to 110 ± 5% of the white level. **(Refer to Fig. 2-3)**
13. Press the TV/DVD button on the remote control to set to the DVD mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(52)** on the remote control to select "COLCD".
15. Press the RIGHT/LEFT button on the remote control to increase the step numbers by 3 steps to the AV.

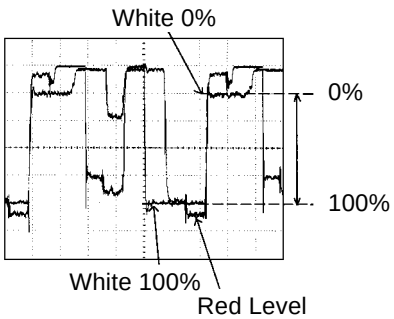



Fig. 2-4

# ELECTRICAL ADJUSTMENTS

### 2-16: SUB CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(15)** on the remote control to select "CNTX".
2. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "3A"
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT SELECT button on the remote control to set to the AV mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(46)** on the remote control to select "CNTXA".
6. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "3A"
7. Receive a broadcast and check if the picture is normal.
8. Press the TV/DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(58)** on the remote control to select "CNTXD".
10. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "35"
11. Press the GAME button on the remote control to set to the GAME mode.
12. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(65)** on the remote control to select "CNTXG".
13. Press the RIGHT/LEFT button on the remote control until the contrast step No. becomes "20"

### 2-17: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

| NO. | FUNCTION | STEP NO. | NO. | FUNCTION | STEP NO. |
|---|---|---|---|---|---|
| 07 | BRIGHTNESS(MAX) | 6A | 39 | BRI. AV(MIN) | 45 |
| 08 | BRIGHTNESS(MIN) | 45 | 41 | COL. AV(MAX) | 7F |
| 10 | COLOR(MAX) | 7F | 42 | COL. AV(MIN) | 00 |
| 11 | COLOR(MIN) | 00 | 44 | SUB CONTRAST AV | 0A |
| 13 | SUB CONTRAST | 0A | 45 | CONT. AV(CENT.) | 20 |
| 14 | CONTRAST(CENT.) | 20 | 47 | CONT. AV(MIN) | 05 |
| 16 | CONTRAST(MIN) | 05 | 48 | SHARPNESS AV | 37 |
| 17 | SHARPNESS | 37 | 50 | BRI. DVD(MAX) | 6A |
| 18 | RGB CONTRAST | 07 | 51 | BRI. DVD(MIN) | 45 |
| 23 | V S CORRECTION | 08 | 53 | COL. DVD(MAX) | 7F |
| 24 | EW PARABOLA CORR. | 00 | 54 | COL. DVD(MIN) | 00 |
| 25 | EW TRAPEZIUM CORR. | 00 | 56 | SUB CONTRAST DVD | 0A |
| 26 | H SIZE | 00 | 57 | CONT. DVD(CENT.) | 20 |
| 27 | V EHT | 00 | 59 | CONT. DVD(MIN) | 05 |
| 28 | H EHT | 00 | 60 | SHARPNESS DVD | 30 |
| 30 | V CENTERING | 28 | 62 | BRI. GAME(MAX) | 6A |
| 31 | CORNER CORR. TOP | 00 | 63 | BRI. GAME(MIN) | 45 |
| 32 | CORNER CORR. BTM | 00 | 64 | CONT. GAME(CENT.) | 35 |
| 34 | FM LEVEL | 3F | 66 | CONT. GAME(MIN) | 05 |
| 35 | TEST PWM | 00 | 67 | TUNING V MUTE | 08 |
| 36 | TEST TONE CONTROL | 51 | 68 | POWER ON V MUTE | 5D |
| 38 | BRI. AV(MAX) | 6A | | | |

# ELECTRICAL ADJUSTMENTS

## 3. PURITY AND CONVERGENCE ADJUSTMENTS

**NOTE**

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

### 3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

### 3-2: PURITY

**NOTE**

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

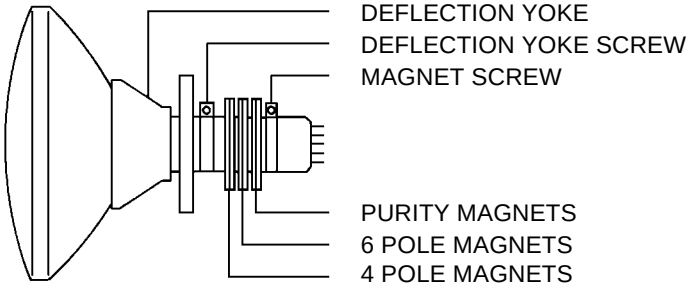



**Fig. 3-1**

### 3-3: STATIC CONVERGENCE

**NOTE**

Adjust after performing adjustments in section 3-2.

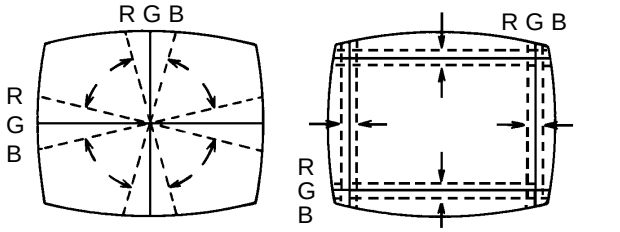
1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

### 3-4: DYNAMIC CONVERGENCE

**NOTE**

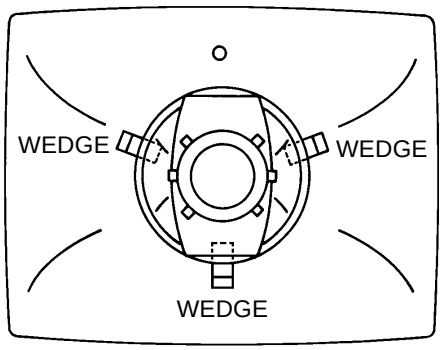
Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**




UPWARD/DOWNWARD SLANT  RIGHT/LEFT SLANT

**Fig. 3-2-a**

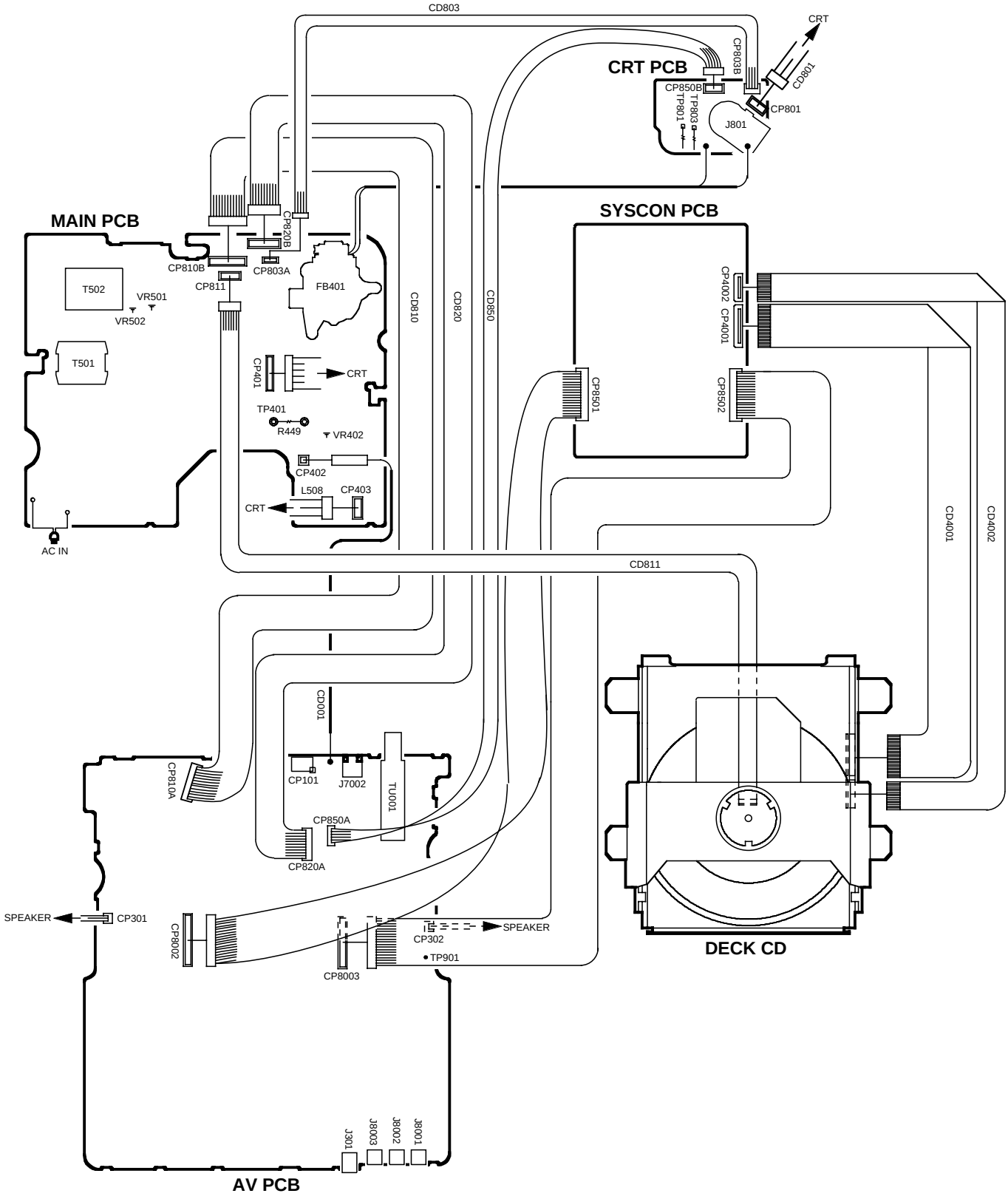



WEDGE POSITION

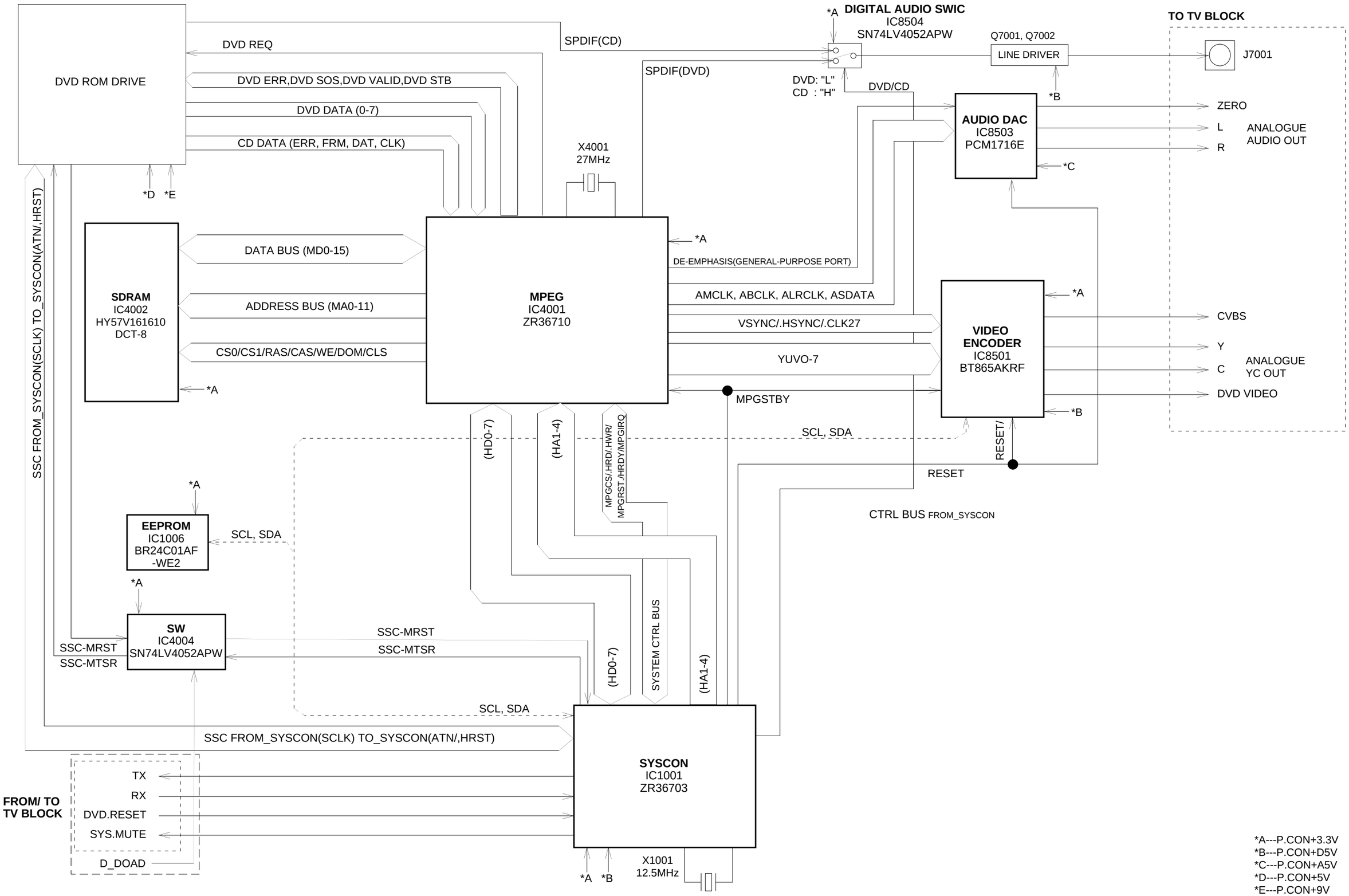
**Fig. 3-2-b**

# ELECTRICAL ADJUSTMENTS

## 4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



# DVD BLOCK DIAGRAM



# TV BLOCK DIAGRAM

DEFLECTION SIGNAL
R.SIGNAL
G.SIGNAL
B.SIGNAL
TUNER AUDIO SIGNAL
TUNER VIDEO SIGNAL
DIGITAL AUDIO SIGNAL

FROM DVD BLOCK
DVD_VIDEO
DVD A L
DVD A R
ZERO
SYS MUTE

Q7012 MUTE SW
Q7011 MUTE SW
AT+5V
1 RESET IC102 PST600C 3
*B
MIXER IC7001 NJM4580M
Q7009, Q7010 MUTE SW
Q7003 MUTE
Q7006 MUTE
RY7001
J7002 V L R
VOL UP
VOL DOWN
CH UP
CH DOWN
POWER
OPEN
STOP
PLAY
SKIP>>
SKIP<<

TU001
SCL SDA AGC IF
4 5 1 11
Q205 PRE AMP
SAW FILTER CF203
1 5 4
MEMORY IC199 S-24C08ADPA-01
5 6
MICON IC101 OEC6063C
37 SCL 38 SDA
18 KEY2
17 KEY1
33 RESET
5 EXT_MUTE
36 SD 4 TV_MUTE
OSD R 22
OSD G 23
OSD B 24
V-SYNC 27
H-SYNC 26
XIN 31
XOUT 32
X101 16MHz
Q202,Q203 BUFFER 55
Q204 BUFFER 51
Q702 BUFFER 47

IF/CHROMA IC601 TB1253N
6 7 9 25 24 20 21 22
R.OUT 14
G.OUT 15
B.OUT 16
*A
*D
34
Q405 H.DRIVE
Q406 H. OUT
33
Q111 BUFFER
38
31
10
X601 3.579545MHz
V. OUT PUT IC401 LA78040
1 5 3
DY801
Q804 RED AMP
Q805 GREEN AMP
Q806 BLUE AMP
V801 CRT
3 9 7
8 F
FB401
1 S F 9 HV

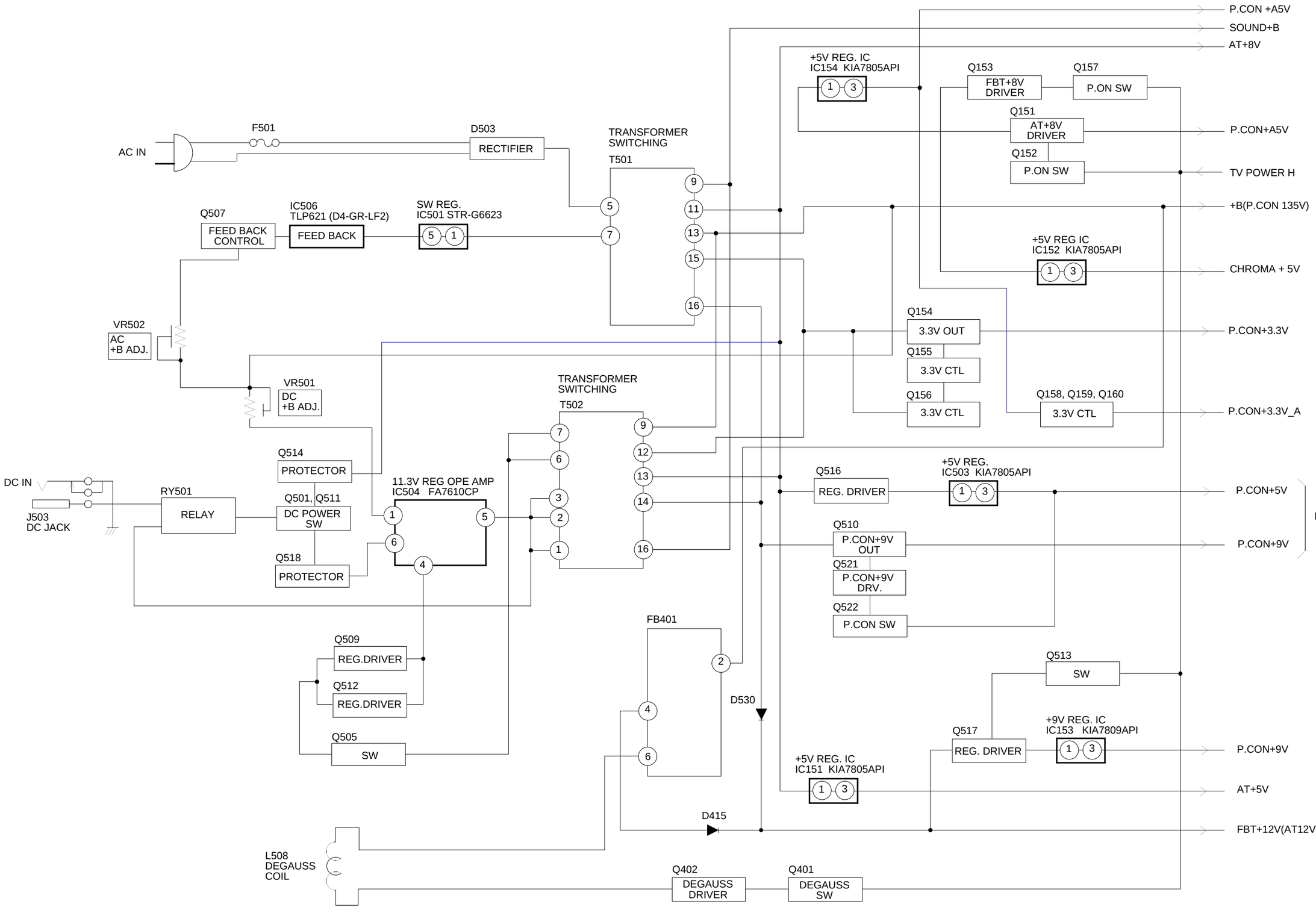
Q105 V BUFFER
Q103 H BUFFER
Q301 MUTE
9 6 8
SOUND AMP IC302 AN7522
2 4 12 10
SPEAKER SP301
SPEAKER SP302
J301 HEAD AMP
SOUND +B

AV SW IC701 MM1311AD
7 1 31 8 2 4 10
25 24 23
*A
Q8003 BUFFER
Q8002 BUFFER
SOUND DECORDER IC IC902 AN5829S
14 19 18
21 22 7
32 30
*C
VIDEO J8003
AUDIO L J8002
AUDIO R J8001

Q7008 MUTE SW
Q7007 MUTE SW
Q7005 MUTE SW
Q7004 MUTE SW

*A---P.CON+9V
*B---P.CON+12V
*C---P.CON+A5V
*D---CHROMA+5V

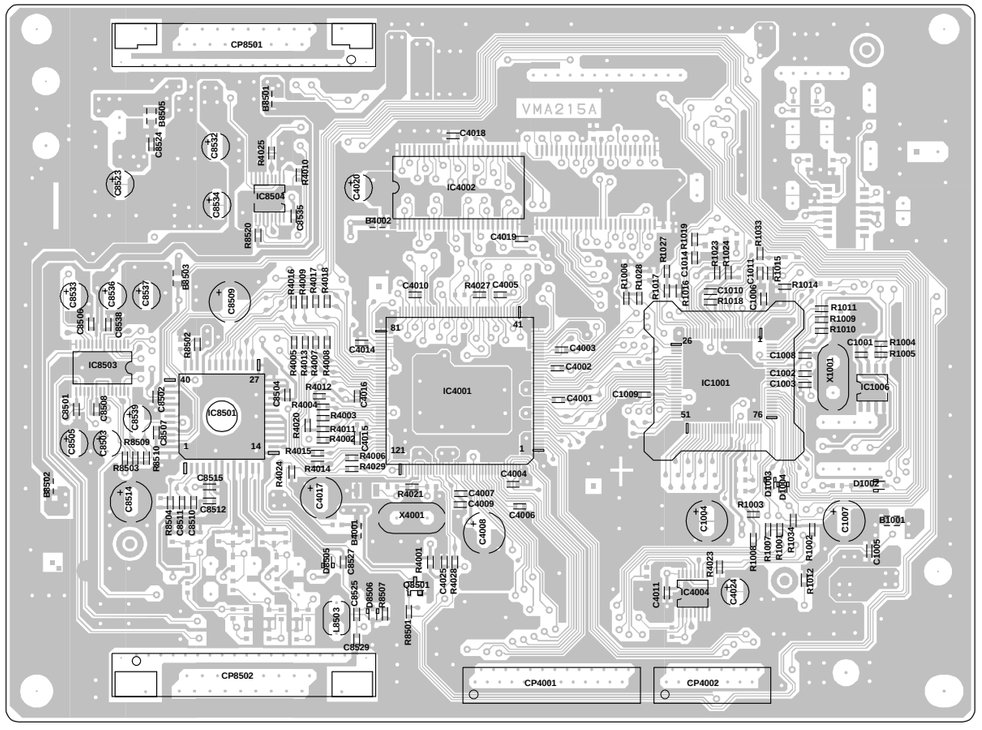
# POWER BLOCK DIAGRAM



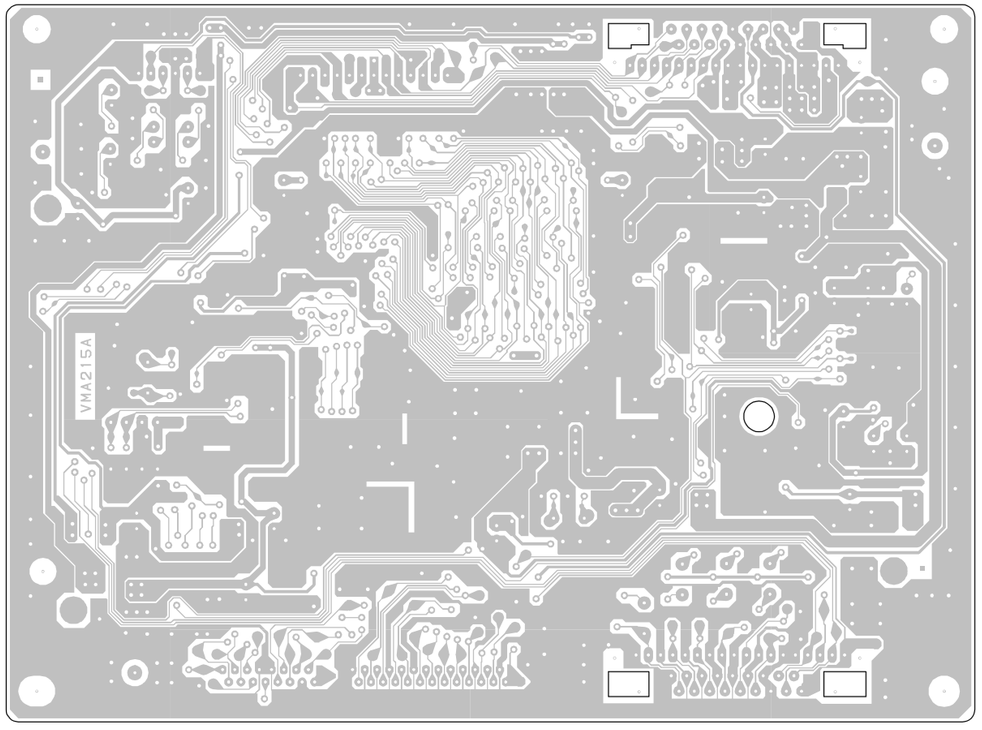
# PRINTED CIRCUIT BOARDS

## SYSCON

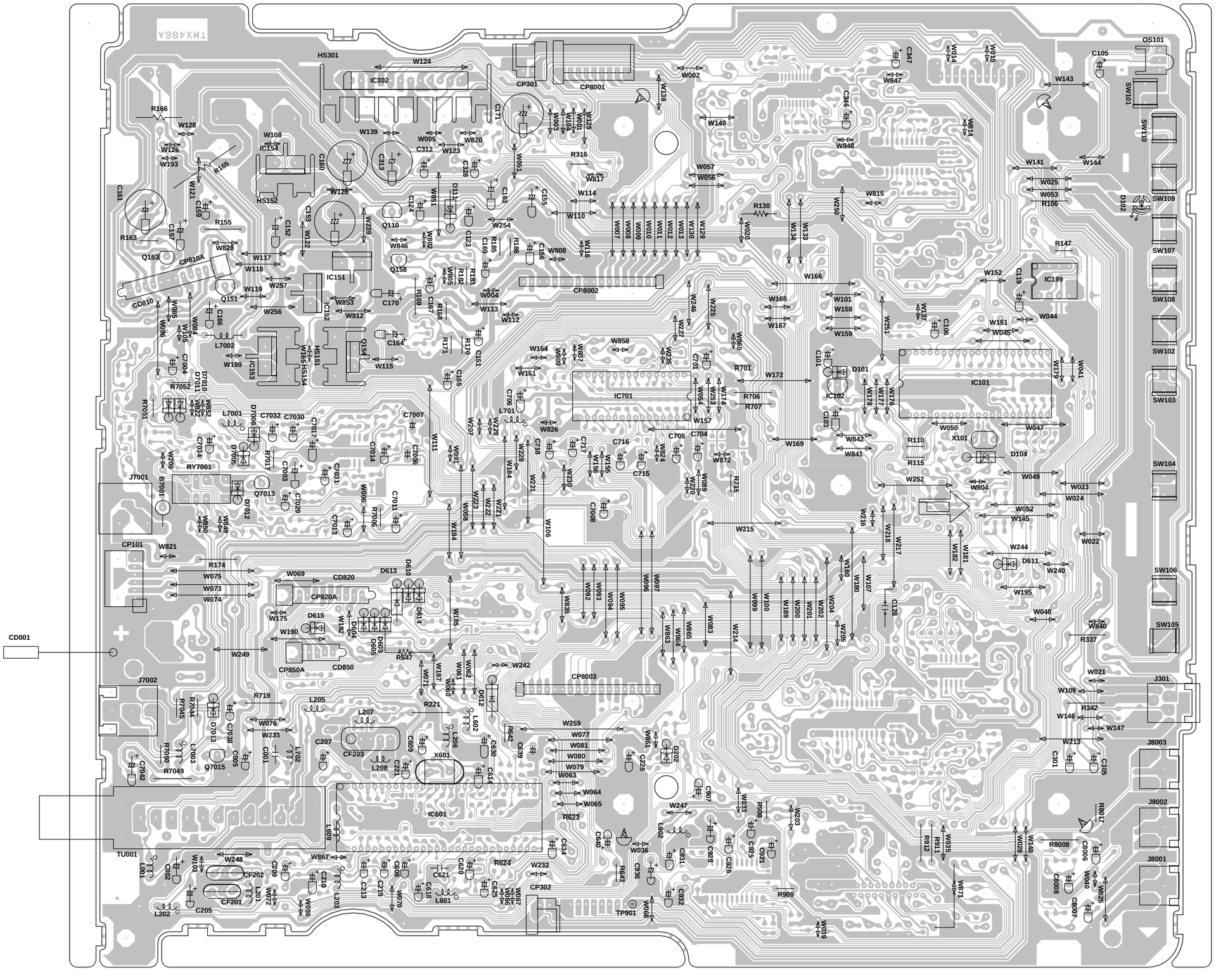
**(TOP SIDE)**



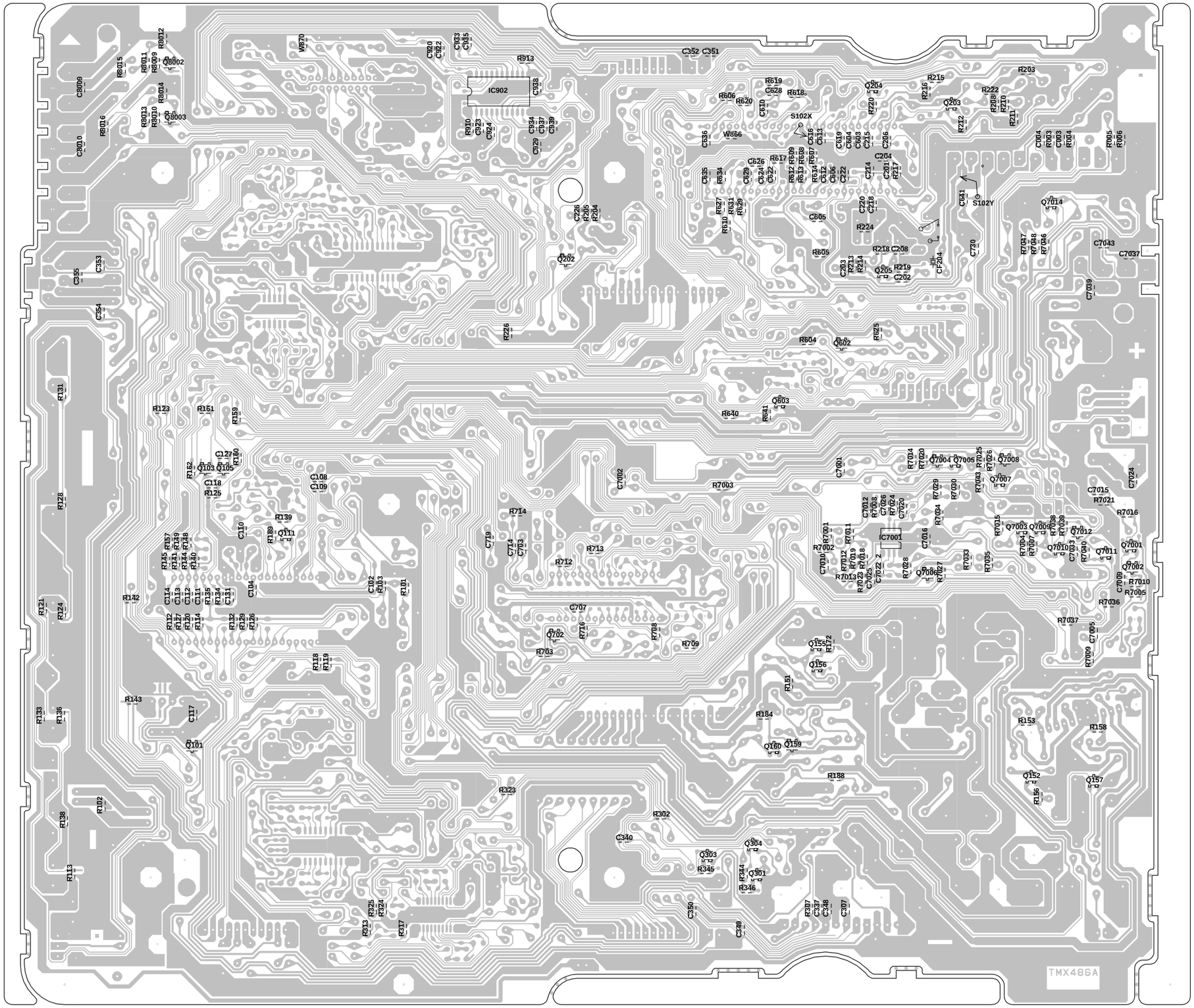

**(BOTTOM SIDE)**



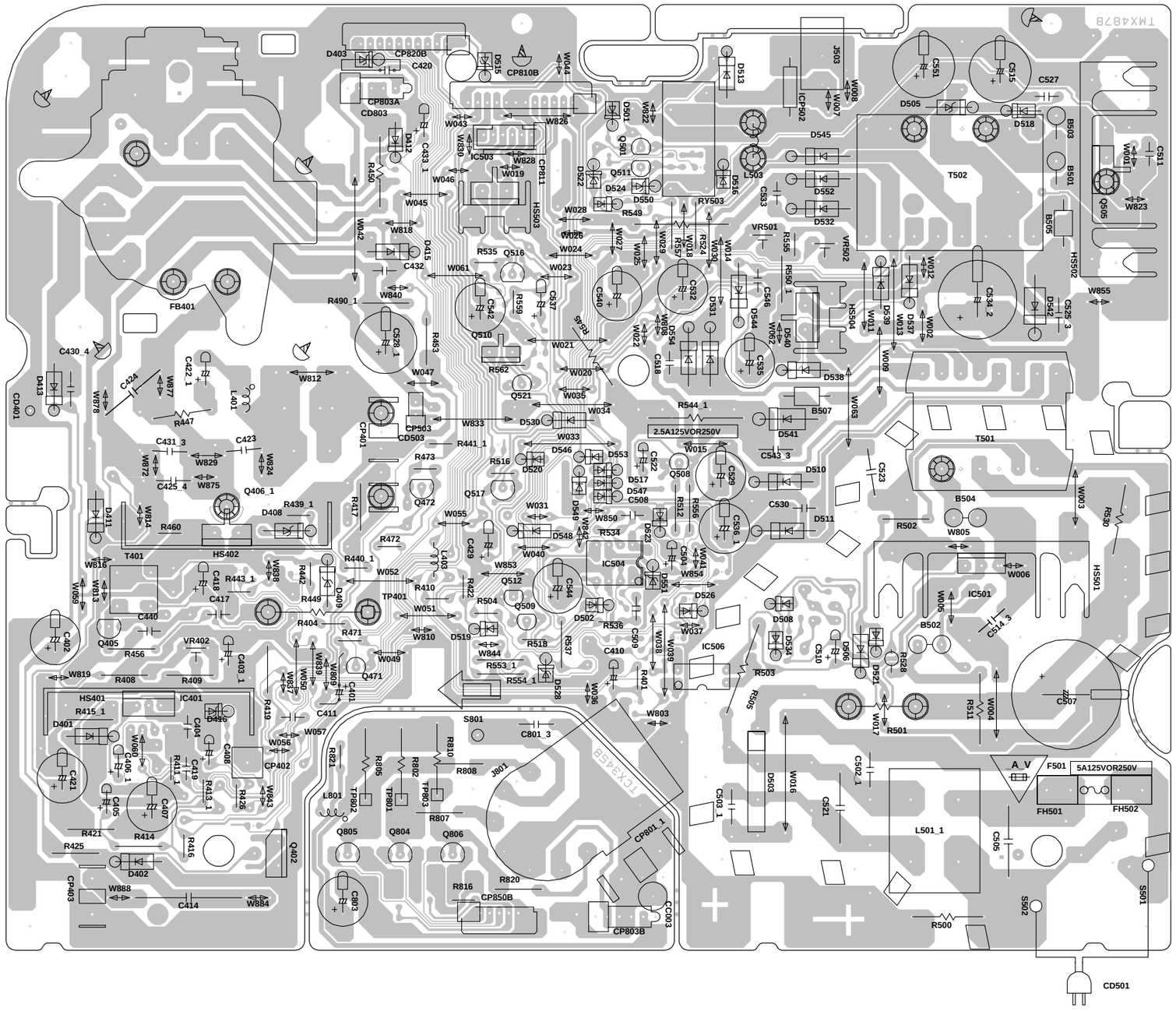
# PRINTED CIRCUIT BOARDS
# AV (INSERTED PARTS)
## SOLDER SIDE


TMX48SA
HS301
IC302
CP301
CP8001
W124
W139
W005
W820
W123
W125
W104
W001
W003
W138
W002
W140
W057
W056
W817
W114
W110
R316
C312
C313
C328
C171
C160
C161
C155
C158
C159
C157
C152
C124
C123
C169
C156
C168
C167
C170
C164
C151
C165
C166
C154
C153
C7004
C7034
C7005
C7017
C7003
C7031
C7029
C7013
C7012
C7014
C7006
C7007
C7011
C7008
C7701
C7706
C718
C717
C716
C715
C705
C704
C347
C346
C105
C106
C119
C101
C103
C128
W847
W848
W814
W815
W250
W143
W141
W144
W025
W053
R106
R130
W020
W134
W133
W129
W130
W007
W008
W009
W010
W011
W012
W013
W851
W852
W802
W846
W808
W004
W113
W112
W853
W812
W257
W256
W117
W118
W119
W828
W239
W122
W126
W120
W108
W193
W126
W128
W121
R166
R165
R155
R163
Q153
Q151
Q158
Q110
Q154
IC151
IC152
CP810A
CD810
CP8002
R254
R185
R186
R182
R183
R169
R168
R171
R170
W246
W225
W224
W235
W858
W860
W807
W809
W164
W161
W115
W199
W165
W166
W168
W167
W101
W158
W159
W251
W137
W152
W151
W045
W044
IC199
R147
SW108
SW107
SW102
SW103
SW104
SW105
SW106
SW109
SW110
SW101
OS101
D102
IC701
IC101
IC102
D101
W157
W169
W172
W174
W253
W254
W054
R706
R707
R701
W872
W842
W841
W176
W177
W178
W179
W041
W050
W047
X101
D104
R110
R115
W252
W804
W049
W023
W024
W052
W145
W022
W244
D611
W240
W195
W048
W340
R337
W021
W109
R342
W146
W147
W213
J301
J8003
J8002
J8001
C301
C305
R8017
R8008
C8006
C8008
C8007
W040
W825
W148
W028
R912
R911
W035
W871
R909
W039
W038
W036
C936
C932
C931
C928
C926
C925
C921
C907
C908
C909
C910
C911
C912
C913
C914
C915
C916
C917
C918
C919
C920
C921
C922
C923
C924
C925
C926
C927
C928
C929
C930
C931
C932
C933
C934
C935
C936
C937
C938
C939
C940
C941
C942
C943
C944
C945
C946

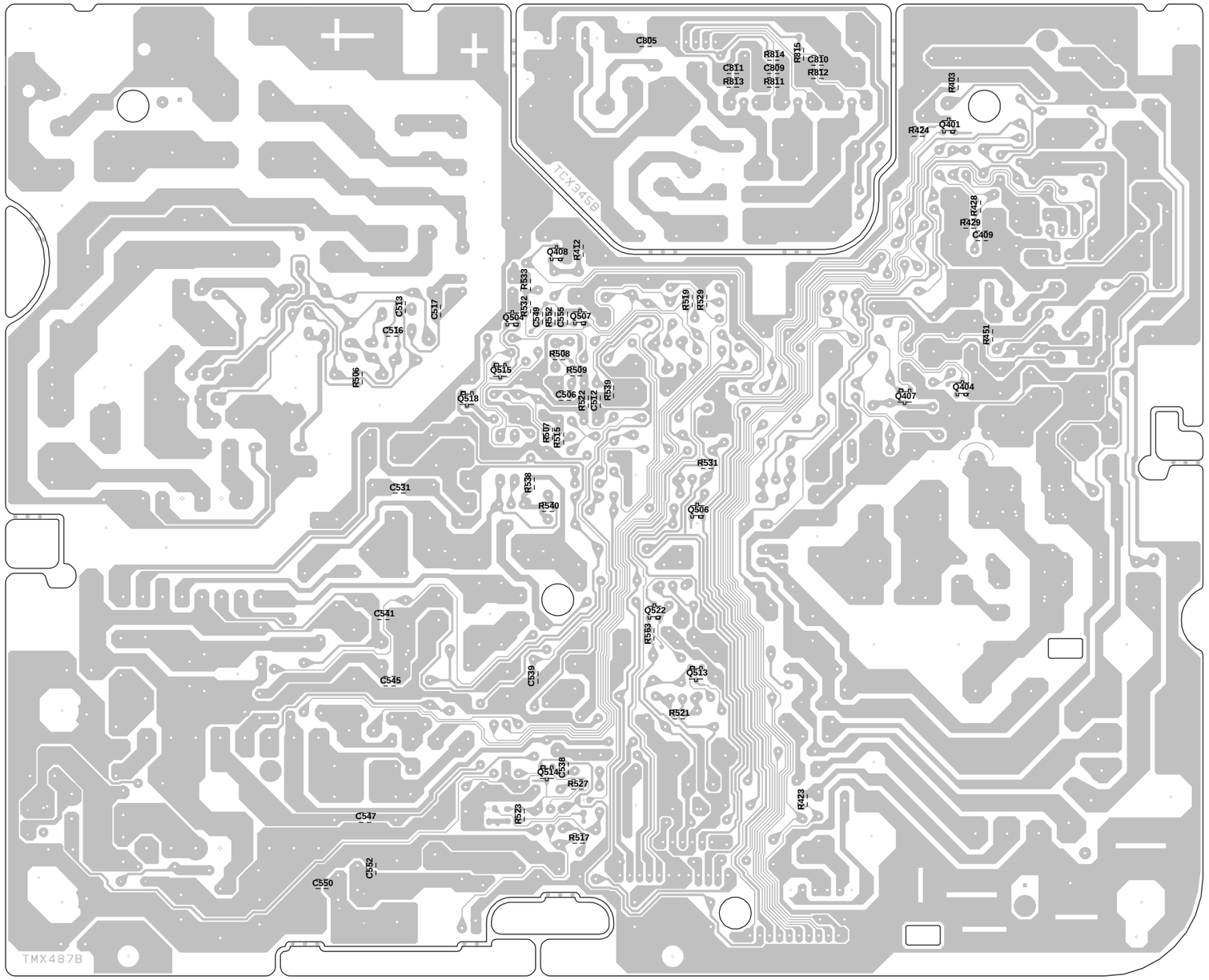
# PRINTED CIRCUIT BOARDS
# AV (CHIP MOUNTED PARTS)
## SOLDER SIDE



# PRINTED CIRCUIT BOARDS
# MAIN/CRT (INSERTED PARTS)
## SOLDER SIDE


TMX4878
D403
CP820B
C420
CP803A
CD803
D515
CP810B
W044
D501
W022
Q501
D513
J503
ICP502
W008
W007
C551
C515
C527
D505
D518
B503
B501
B505
HS502
W855
C511
W001
Q505
W823
T502
D545
D552
D532
C533
L503
D516
RY503
VR501
VR502
R555
R560_1
D538
D537
W012
W013
W011
W002
W009
HS504
C546
D544
D540
D542
C525_3
C534_2
W043
W826
W830
IC503
W828
CP811
W019
W046
W045
HS503
W818
D415
C432
W042
R450
C433_1
D412
D322
Q511
D524
D550
R549
W028
W026
W024
W027
W025
R535
Q516
W061
C542
R559
C537
C540
R524
W030
W014
R557
W029
W018
C532
D531
D554
W010
W022
C535
C518
W062
D540
D544
W021
W023
W840
R490_1
C528_1
R453
Q510
R562
W047
W020
W035
W034
Q521
W833
D530
R544_1
2.5A125VOR250V
B507
D541
W015
C543_3
D510
C530
D511
W063
T501
C523
B504
W805
R502
W003
R530
W006
HS501
IC501
C514_3
B502
W005
D508
D534
C510
D506
D521
R528
R503
R505
R511
W004
W017
R501
C507
W037
W039
IC506
C509
C410
R401
W036
D528
R554_1
R553_1
W844
W049
Q471
R518
R537
D519
W810
R471
R404
R449
D409
R440_1
W052
R410
TP401
W051
R422
Q512
Q509
R504
D502
R536
C544
IC504
W853
W040
D549
W850
W849
R534
D548
D523
C504
D551
W041
W854
D526
R512
R556
C538_1
C529
Q508
D517
D547
C508
D520
R516
D546
D553
W033
W031
W055
R472
C429
L403
R473
Q472
R417
Q517
R441_1
CP503
CD503
CP401
D530
W833
W034
W035
Q521
W020
W047
W812
C424
W877
C422_1
L401
R447
C430_4
D413
CD401
W878
FB401
R490_1
C528_1
R453
C542
R559
C537
Q510
R562
C540
SF33
W021
W022
C535
C518
W062
D540
D544
D531
D554
W010
C532
W014
R557
W029
W018
R524
W030
C546
D538
W009
W063
B507
D541
W015
C543_3
D510
C530
D511

# PRINTED CIRCUIT BOARDS
# MAIN/CRT (CHIP MOUNTED PARTS)
## SOLDER SIDE



# MPEG SCHEMATIC DIAGRAM (SYSCON PCB)

FROM/TO LOADER

CD4001 — CP4001 IMSA-9615S-26C-P — 2S0Q0901

| | | |
|---|---|---|
| 1 | SDT7 | DVDDAT7 |
| 2 | GND | |
| 3 | SDT6 | DVDDAT6 |
| 4 | GND | |
| 5 | SDT5 | DVDDAT5 |
| 6 | GND | |
| 7 | SDT4 | DVDDAT4 |
| 8 | GND | |
| 9 | SDT3 | DVDDAT3 |
| 10 | GND | |
| 11 | SDT2 | DVDDAT2 |
| 12 | GND | |
| 13 | SDT1 | DVDDAT1 |
| 14 | GND | |
| 15 | SDT0 | DVDDAT0 |
| 16 | GND | |
| 17 | DREQ | DVDREQ |
| 18 | GND | |
| 19 | DACK | DVDVALID |
| 20 | GND | |
| 21 | DERR | DVDERR |
| 22 | GND | |
| 23 | DBGN | DVDSOS |
| 24 | GND | |
| 25 | DCLK | DVDSTB |
| 26 | GND | |

CD4002 — CP4002 IMSA-9615S-16C-P — 2S0G0901

| | | |
|---|---|---|
| 1 | | NC |
| 2 | HRST | HRST |
| 3 | GND | |
| 4 | TXD | |
| 5 | RXD | |
| 6 | SCLK | SSC-SCLK |
| 7 | RDY HIF | SSC-ATN |
| 8 | GND | |
| 9 | 16M | |
| 10 | GND | |
| 11 | | NC |
| 12 | C2PO | |
| 13 | LRCK | |
| 14 | BCK | |
| 15 | CD-DATA | |
| 16 | SPDIF | |

FROM/TO SYSCON

HRST, SSC-MRST, SSC-MTSR, SSC-SCLK, SSC-ATN, HD7, HD6, HD5, HD4, HD3, HD2, HD1, HD0, HA4, HA3, HA2, HA1, HWR#, MPGCS#, HRD#, MPGIRQ#, MPGRST, MPGSTBY, HRDY

R4025 100

C4001 0.1 F — C4002 0.1 F — C4011 0.1 F — C4024 6.3V 47 KA

DIGITAL AUDIO SW IC IC4004 SN74LV4052APW

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| VCC | X2 | X1 | X | X0 | X3 | A | B | Y0 | Y2 | Y | Y3 | Y1 | Inhibit | VEE | GND | |

R4023 10K

C4003 0.1 F — C4005 0.1 F — R4027 100 — C4010 0.1 F — C4014 0.1 F

MPEG IC
IC4001
ZR36710

C4004 0.1 F — C4006 0.1 F — C4009 0.047 B — C4025 0.1 F — C4007 0.001 B — C4008 6.3V 220 KA — R4001 2.2 — X4001 27MHz — R4021 1M

C4015 0.1 F — C4017 6.3V 220 KA — R4029 100 — R4024 1K — R4028 100

B4001 N2012ZP600T25

FROM/TO VIDEO ENCORDER

P.CON+3.3VA, DGND, P.CON+3.3V.MP, P.CON+3.3V, AMCLK, CLK27, ABCLK, ALRCLK, SPDIF-DVD, ASDAT0, YUV0–YUV7, HSYNC, VSYNC, SPDIF-CD, DM1, AIN, D_LOAD-H

R4006 100 — R4014 180 — R4010 100 — R4015 180 — R4020 4.7K — R4002 4.7K — R4011 4.7K — R4003 4.7K — R4004 4.7K — R4012 4.7K — C4016 0.1 F — R4005 180 — R4013 180 — R4007 180 — R4008 180 — R4016 180 — R4009 180 — R4017 180 — R4018 180

FROM/TO SDRAM

MA4, MA3, MA5, MA2, MA6, MA1, MA7, MA0, MA8, MA10, MA9, MA11, MCS0#, MRAS#, MPCLK, MCAS#, MWE#, MDQM, MD8, MD7, MD9, MD6, MD10, MD5, MD11, MD4, MD12, MD3, MD13, MD2, MD14, MD1, MD15, MD0

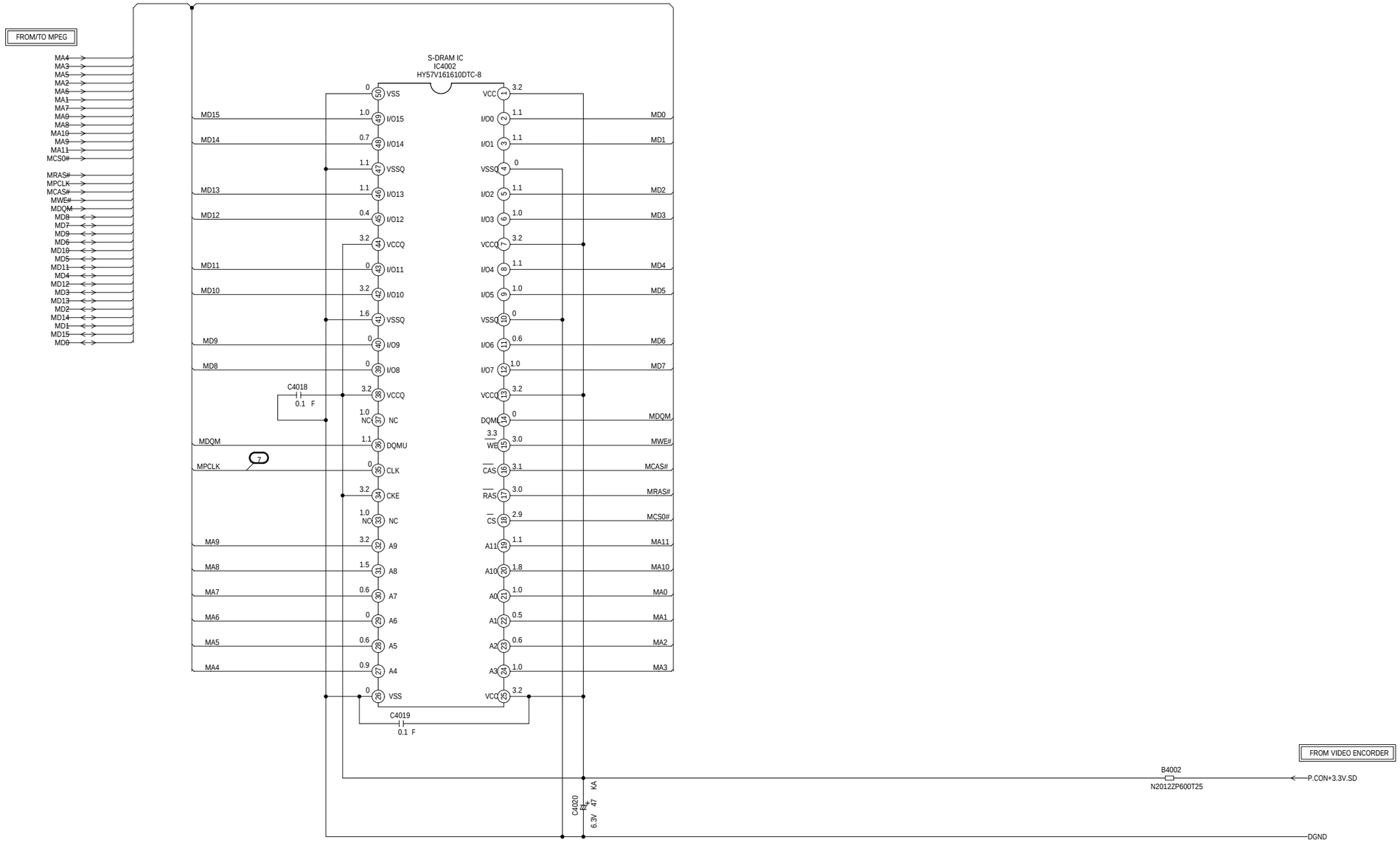
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB010
VMA215

# SDRAM SCHEMATIC DIAGRAM

(SYSCON PCB)



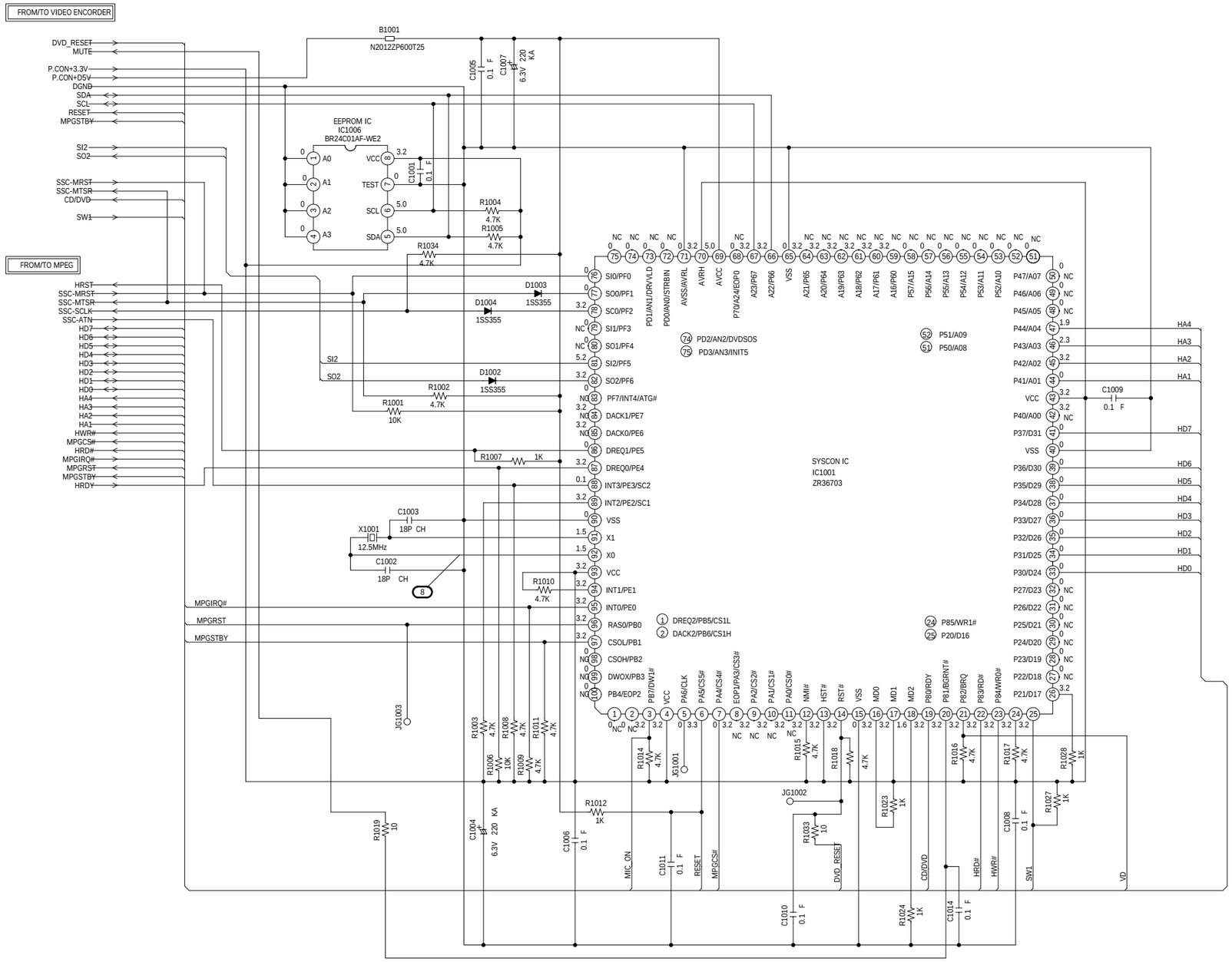

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB010
VMA215

# SYSCON SCHEMATIC DIAGRAM

(SYSCON PCB)

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NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

PCB010
VMA215

# VIDEO ENCORDER SCHEMATIC DIAGRAM (SYSCON PCB)

FROM/TO MPEG
P.CON+3.3VA
DGND
P.CON+3.3V.MP
P.CON+3.3V
AMCLK
CLK27
ABCLK
ALRCLK
SPDIF-DVD
ASDAT0
YUV0
YUV1
YUV2
YUV3
YUV4
YUV5
YUV6
YUV7
HSYNC
VSYNC
SPDIF-CD
DM1
AIN
D_LOAD-H

TO SDRAM
DGND
P.CON+3.3V.SD

FROM/TO SYSCON
DVD_RESET
MUTE
P.CON+3.3V
P.CON+D5V
DGND
SDA
SCL
RESET
MPGSTBY
SI2
SO2
SSC-MRST
SSC-MTSR
CD/DVD
SW1

VIDEO ENCORDER IC
IC8501
BT865AKRF
ALT4ADDR
Y7 Y6 VDD GND Y5 Y4 Y3 Y2 Y1 Y0 NC FIELD RGBOUT
P0 P1 P2 P3 P4 P5 P6 P7 GND VDD TTXREQ SDA SCL SLAVE CLK VDD3V GND VDD RESET BLANK VSYNC HSYNC AGND AGND
C/R AGND CVBS/G AGND CVBS/B AGND AGND AGND COMP VAA VREF VBIAS AGND
27 TTXDAT
39 SLEEP
13 Y/CVBS
1 FS ADJUST
C8504 0.1 F
C8509 220 KA 6.3V
C8514 220 KA 6.3V
C8515 0.1 F
C8512 0.1 F
C8510 0.1 F
C8511 0.1 F
R8504 75 +-1%
R8502 10K
R8501 39K
STND BY
Q8501
2SC2412K
C8502 0.1 F
C8507 0.1 F
B8503 N2012ZP600T25
B8502 N2012ZP600T25
B8505 N2012ZP600T25
B8501 N2012ZP600T25
C8532 47 KA 6.3V
C8523 47 KA 6.3V
C8524 0.1 F
C8525 22P CH
L8503 1.8uH 0405
D8505 1SS355
D8506 1SS355
R8507 75 +-1%
C8527 150P CH
C8529 220P CH
10
CLK27
AMCLK
ABCLK
ASDAT0
ALRCLK
VSYNC
HSYNC

FROM/TO POWER
CP8501 (CP8002)
TKC-A18X-J1

| | | | |
|---|---|---|---|
| SI2 | TX | 1 | |
| SO2 | RX | 2 | |
| SSC-MRST | SSC-MRST | 3 | |
| SSC-MTSR | SSC-MTSR | 4 | |
| SW1 | SW1 | 5 | |
| DVD_RESET | DVD RESET | 6 | |
| D_LOAD-H | D LOAD | 7 | |
| | P.CON+A5V | 8 | |
| | GND | 9 | |
| | GND | 10 | |
| | P.CON+3.3VA | 11 | |
| | P.CON+D5V | 12 | |
| | P.CON+D5V | 13 | |
| | GND | 14 | |
| | P.CON+3.3V | 15 | |
| | P.CON+3.3V | 16 | |
| | GND | 17 | |
| SPDIF | SPDIF-134 | 18 | |

CP8502 (CP8003)
TKC-A18X-J1

| | | | |
|---|---|---|---|
| | GND | 18 | |
| | CVBS | 17 | |
| | GND | 16 | |
| NC | | 15 | |
| | GND | 14 | |
| NC | | 13 | |
| | GND | 12 | |
| NC | | 11 | |
| | GND | 10 | |
| AUDIO_L | AUDIO-L | 9 | |
| | GND | 8 | |
| AUDIO_R | AUDIO-R | 7 | |
| | GND | 6 | |
| | GND | 5 | |
| NC | | 4 | |
| ZERO | ZERO | 3 | |
| DVD_RESET | DVD RESET | 2 | |
| MUTE | MUTE | 1 | |

STEREO DAC IC
IC8503
PCM1716E
AGND1 VOUTR NC EXTR AGND2R VCC2R VDD DGND XTO XTI CLKI BCKIN DIN LRCIN
VCC1 VOUTL NC EXTL AGND2L VCC2L ZERO RST CSN/WO MODE MUTE MD/DMO MC/DM1 ML/IIS
C8533 22 KA 6.3V
C8536 22 KA 6.3V
C8537 22 KA 6.3V
C8506 0.1 F
C8538 0.1 F
C8505 22 KA 6.3V
C8501 0.1 F
C8508 0.1 F
C8503 22 KA 6.3V
C8539 22 KA 6.3V
R8503 10K
R8509 10K
R8510 10K
C8535 0.1 F
C8534 47 KA 6.3V
R8520 1K
DIGITAL AUDIO SW IC
IC8504
SN74LV4052APW
VCC X2 X1 X X0 X3 A B
Y0 Y2 Y Y3 Y1 Inhibit VEE GND
AUDIO_R AUDIO_L ZERO DM1 SPDIF-DVD SPDIF SPDIF-CD CD/DVD

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

DIGITAL AUDIO SIGNAL(PB)
PLAYBACK LUMINANCE SIGNAL
AUDIO SIGNAL(PB)

PCB010
VMA215

# POWER SCHEMATIC DIAGRAM

## (AV PCB)

FROM/TO TV POWER

CP810A (CP810B)
B2013H02-12P

| | |
|---|---|
| 1 | AT+8V |
| 2 | SOUND GND |
| 3 | SOUND+B |
| 4 | AT+6V |
| 5 | X-RAY TEST |
| 6 | GND |
| 7 | GND |
| 8 | GND |
| 9 | FBT+8V |
| 10 | P.CON+12V |
| 11 | CHROMA+5V |
| 12 | NC |

L010 W5T29X7 5X19

FROM/TO DEFLECTION

CP820A(CP820B) B2013H02-10P

| | |
|---|---|
| 1 | H.OUT |
| 2 | AT+30V |
| 3 | GND |
| 4 | NC |
| 5 | V.OUT |
| 6 | ACL |
| 7 | VD |
| 8 | POWER FAIL |
| 9 | TV POWER ON H |
| 10 | AFC |

L005 W5T29X 7.5X19

CP8001
173979-9

| | |
|---|---|
| 1 | D LOAD |
| 2 | D0(DVD RESET) |
| 3 | SW1 |
| 4 | SSC-MTSR |
| 5 | SSC-MRST |
| 6 | RX |
| 7 | TX |
| 8 | VCC |
| 9 | GND |

FROM/TO VIDEO ENCORDER

CP8002 (CP8501)
9210B-1-18Z713-T

| | |
|---|---|
| 1 | TX |
| 2 | RX |
| 3 | SSC-MRST |
| 4 | SSC-MTSR |
| 5 | SW1 |
| 6 | D0(DVD RESET) |
| 7 | D_LOAD |
| 8 | P.CON+A5V |
| 9 | GND |
| 10 | GND |
| 11 | P.CON+3.3VA |
| 12 | P.CON+D5V |
| 13 | P.CON+D5V |
| 14 | GND |
| 15 | P.CON+3.3V |
| 16 | P.CON+3.3V |
| 17 | GND |
| 18 | SPDIF-134 |

CP8003 (CP8502)
9210B-1-18Z713-T

| | |
|---|---|
| 18 | GND |
| 17 | CVBS |
| 16 | GND |
| 15 | NC |
| 14 | GND |
| 13 | NC |
| 12 | GND |
| 11 | NC |
| 10 | GND |
| 9 | AUDIO-L |
| 8 | GND |
| 7 | AUDIO-R |
| 6 | GND |
| 5 | GND |
| 4 | NC |
| 3 | ZERO |
| 2 | DVD RESET |
| 1 | MUTE |

AT+8V DRIVER Q151 2SB1131

FBT+8V DRIVER Q153 2SB926

P.ON SW Q152 2SC2412K

P.ON SW Q157 DTC114EKA

+5V REG IC IC151 KIA7805API

+5V REG IC IC152 KIA7805API

+9V REG IC IC153 KIA7809API

+5V REG IC IC154 KIA7805API

3.3V OUT Q154 2SB1143

3.3V CTL Q155 2SC2412K

3.3V CTL Q156 2SC2412K

3.3V CTL Q159 2SC2412K

3.3V CTL Q160 2SC2412K

3.3V OUT Q158 2SB698

+5.6V REG Q110 2SD863

HS151 763WAAA034

HS152 763WAAA034

HS154 763WAAA034

TO SOUND AMP
- SOUND_GND
- SOUND+B
- GND

TO STEREO
- GND
- P.CON+A5V

TO AV SW
- GND
- P.CON+9V
- DVD_VIDEO

FROM/TO VIF/SIF/CHROMA
- VD
- V.OUT
- AFC
- H.OUT
- ACL
- GND
- CHROMA+5V
- P.CON+9V

FROM/TO MICON/TUNER
- POWER_ON_H
- DVD_RESET
- P.FAIL/X-RAY_IN
- GND
- AT+30V
- CHROMA+5V
- RX
- TX
- VD
- AFC
- AT+5V
- X-RAY_TEST

TO IN/OUT
- P.CON+9V
- AT+9V
- P.CON+D5V
- SPDIF-134
- AT+5V
- P.CON+12V
- GND
- ZERO
- SYS_MUTE
- DVD_AUDIO_L
- DVD_AUDIO_R

PCB250 TMX486

CAUTION: DIGITAL TRANSISTOR

DIGITAL AUDIO SIGNAL(PB)

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

# MICON/TUNER SCHEMATIC DIAGRAM

## (AV PCB)

TU001 TECC1040PG32D

IC101 MICON IC 0E06063C

IC102 RESET IC PST600C

OS101 PIC-28143SY-2

X101 CSTLS16M0X53-A0

IC199 MEMORY IC S-24C08ADPA-01

Q101 LED ON SW DTC124EKA

Q103 H-BUFFER 2SC2412K

Q105 V-BUFFER 2SC2412K

Q111 BUFFER 2SC2412K

D101 1SS133

D102 RED TAPING SLP-9118C-51H-S

D104 MTZJ5.1B

CP101 TKC-M06X-A1

TEST POINT

TO IN/OUT

FROM/TO AV SW

FROM/TO STEREO

FROM/TO VIF/SIF/CHROMA

TO SOUND AMP

FROM/TO POWER

FROM/TO DEFLECTION

CD001 (CP402) CH01423A

PCB250 TMX486

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

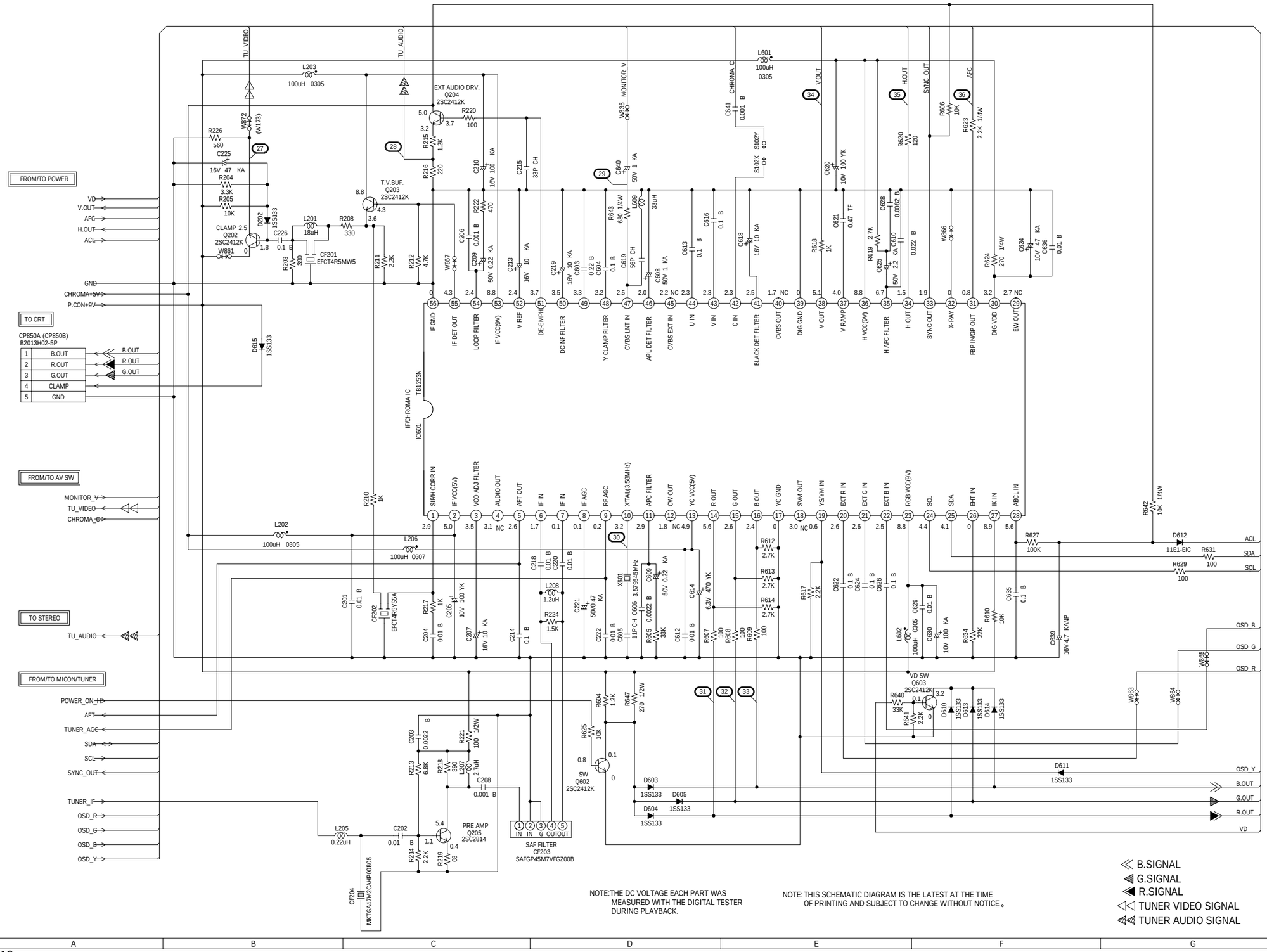
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR

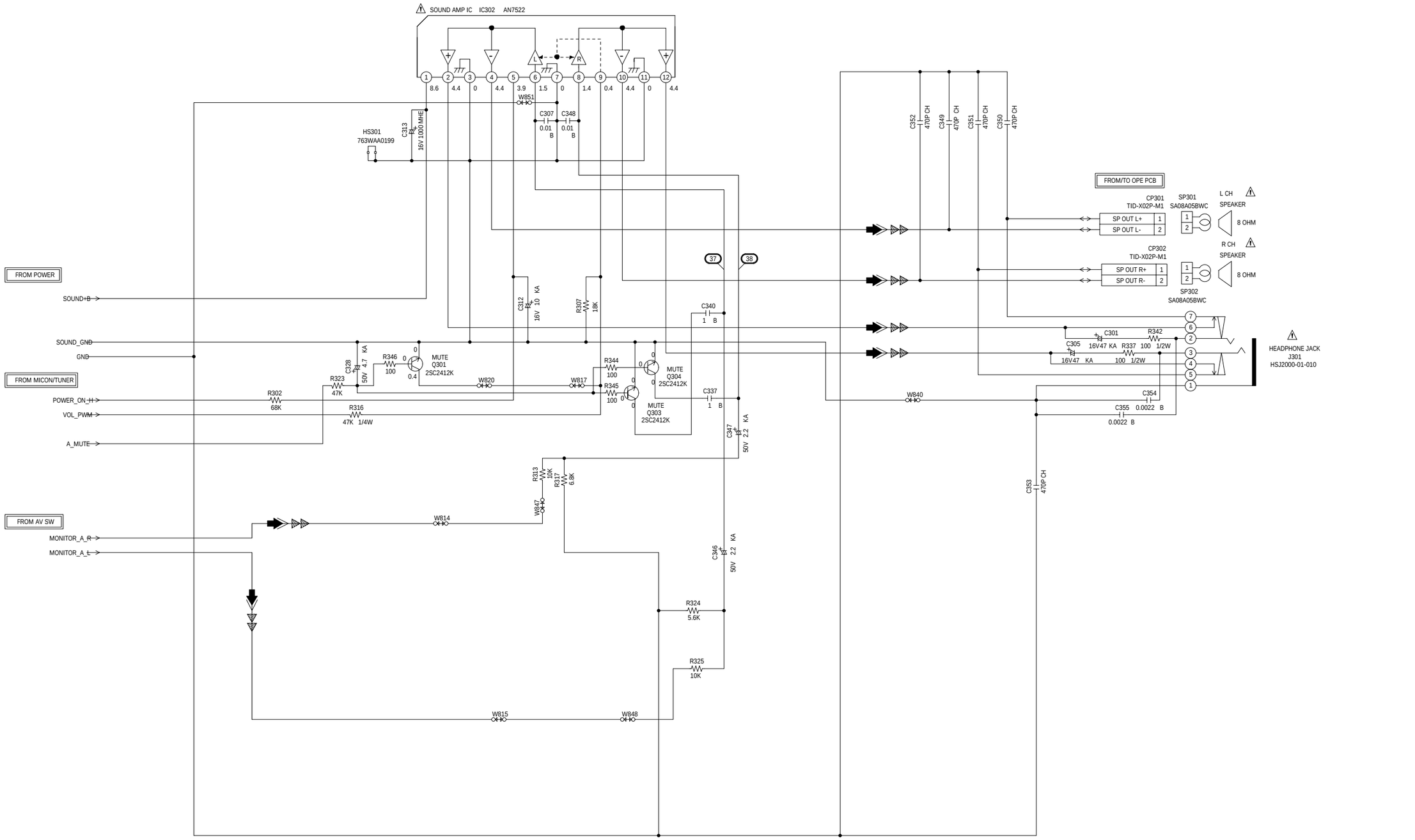
# VIF/SIF/CHROMA SCHEMATIC DIAGRAM

(AV PCB)



# SOUND AMP SCHEMATIC DIAGRAM

## (AV PCB)




NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

DIGITAL AUDIO SIGNAL(PB)

TUNER AUDIO SIGNAL

PCB250
TMX486

# IN/OUT SCHEMATIC DIAGRAM

(AV PCB)

FROM/TO AV SW

DVD_A_L

DVD_A_R

SWD_V.OUT

MONITOR_A_L

MONITOR_A_R

FROM/TO POWER

P.CON+9V

AT+9V

P.CON+D5V

SPDIF-134

AT+5V

P.CON+12V

GND

ZERO

SYS_MUTE

DVD_AUDIO_L

DVD_AUDIO_R

FROM MICON/TUNER

EXT_MUTE

TV/DVD

ZERO

DVD_AUDIO_L

DVD_AUDIO_R

R7003 470 1/4W

R7006 470 1/4W

C7008 16V 10 KA

C7011 16V 10 KA

MUTE SW Q7005 DTA114EKA

MUTE SW Q7007 2SC2412K

MUTE SW Q7004 2SC2412K

MUTE SW Q7008 2SC2412K

R7025 2.2K

R7026 2.2K

R7014 10K

R7020 10K

C7001 470P B

C7002 470P B

C7013 16V 10 KA

L7002 100uH

L7001 100uH 0305

R7009 10

R7005 10

D AUDIO DRIVER Q7001 2SC2412K

D AUDIO DRIVER Q7002 2SA1037AK

R7016 120

C7015 0.1 B

B7001 W4BRH3.5X6X1

RCA JACK J7001 YKC21-3895

C7024 100P CH

C7004 6.3V 47 KA

C7005 0.022 B

C7009 100P CH

R7010 10

R7021 56

W821

D7012 1SS133

RY7001 ATX207

L7003 100uH 0305

RELAY DRIVE Q7013 2SC1815Y

R7043 15K

TV/DVD

R7015 10K

R7017 10 1/4W

D7005 1SS133

D7006 1SS133

R7027 10K

MUTE DET Q7003 2SC2412K

R7004 1K

R7007 470K

C7003 16V 220 YK

SYS_MUTE

MUTE SW Q7006 DTC144EKA

W822

W852

C7033 220P CH

C7020 0.0015 B

C7026 100P CH

R7029 12K

C7029 50V 2.2 KA

R7030 10K

R7008 10K

R7024 10K

C7016 0.1 B

C7017 16V 100 KA

C7031 16V 22 KA

R7034 470

R7051 100 1/4W

R7036 10K

C7032 16V 22 KA

R7035 470

R7052 100 1/4W

R7037 10K

A_GND

MIXER IC IC7001 NJM4580M

VCC

R7001 10K

C7006 50V 2.2 KANP

R7011 100K

C7012 820P CH

R7018 1K

R7002 10K

C7007 50V 2.2 KANP

R7012 100K

C7022_2 0.0015 B

R7013 10K

R7023 10K

C7010 820P CH

R7019 1K

C7014 10V 33 KA

C7025 100P CH

R7028 12K

R7033 10K

C7030 50V 2.2 KA

DVD_A_L

DVD_A_R

D7010 1SS133

D7011 1SS133

39

40

MUTE SW. Q7010 DTA143EKA

MUTE SW Q7012 2SC2412K

R7039 1K

R7038 3.3K

MUTE SW. Q7009 DTC124EKA

C7034 50V 4.7 KA

R7040 1K

MUTE SW Q7011 2SC2412K

W849

W850

R7044 330 1/4W

R7045 330 1/4W

C7037 470P CH

41

SWD_V.OUT

C7038 16V 10 KA

R7046 22K

R7049 330 1/2W

BUFFER Q7014 2SC2412K

R7047 100

BUFFER Q7015 2SA1015Y

C7042 1000 YK 6.3V

R7050 75 1/4W

C7039 470P CH

D7013 1SS133

R7048 12K

C7043 100P CH

VIDEO/AUDIO JACK J7002 AV3-19D-1

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

CAUTION: DIGITAL TRANSISTOR

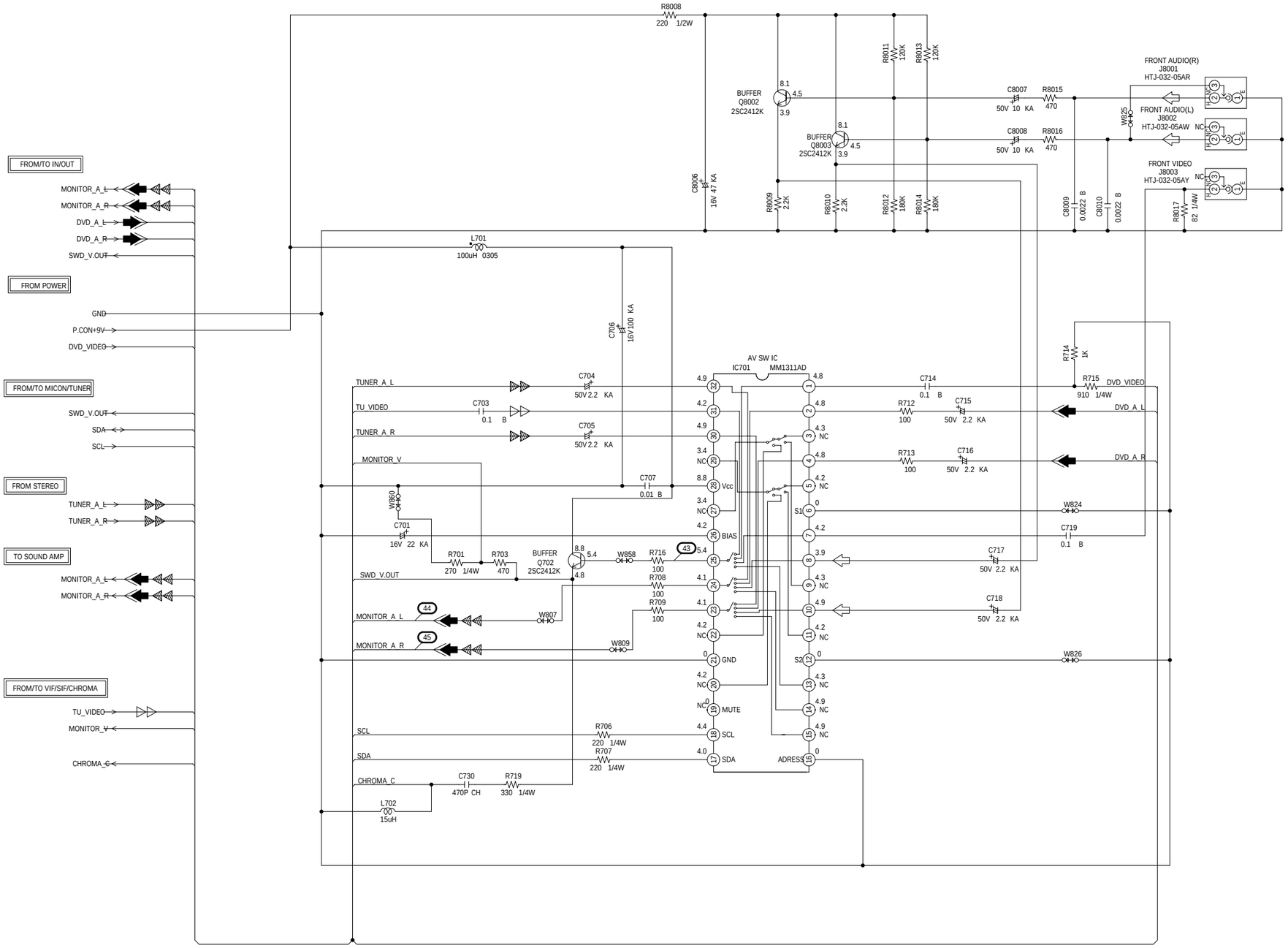
CAUTION: DIGITAL TRANSISTOR

DIGITAL AUDIO SIGNAL(PB)

PCB250
TMX486

# AV SW SCHEMATIC DIAGRAM

## (AV PCB)




NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

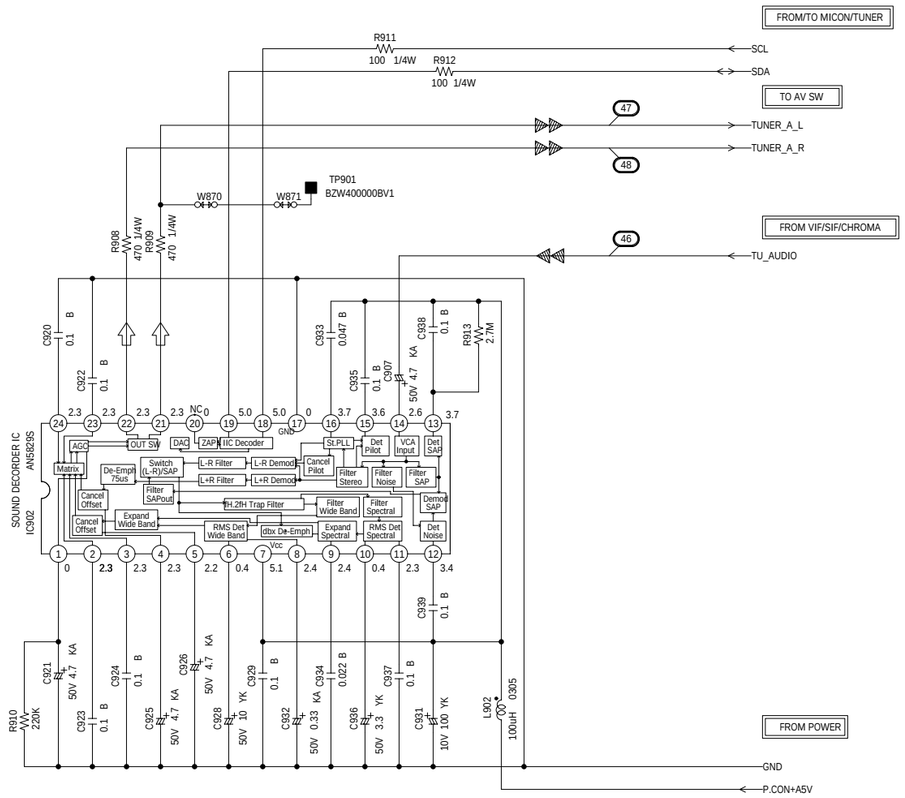
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

AUDIO SIGNAL(REC)
TUNER VIDEO SIGNAL
DIGITAL AUDIO SIGNAL(PB)
TUNER AUDIO SIGNAL

PCB250
TMX486

# STEREO SCHEMATIC DIAGRAM

(AV PCB)




NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

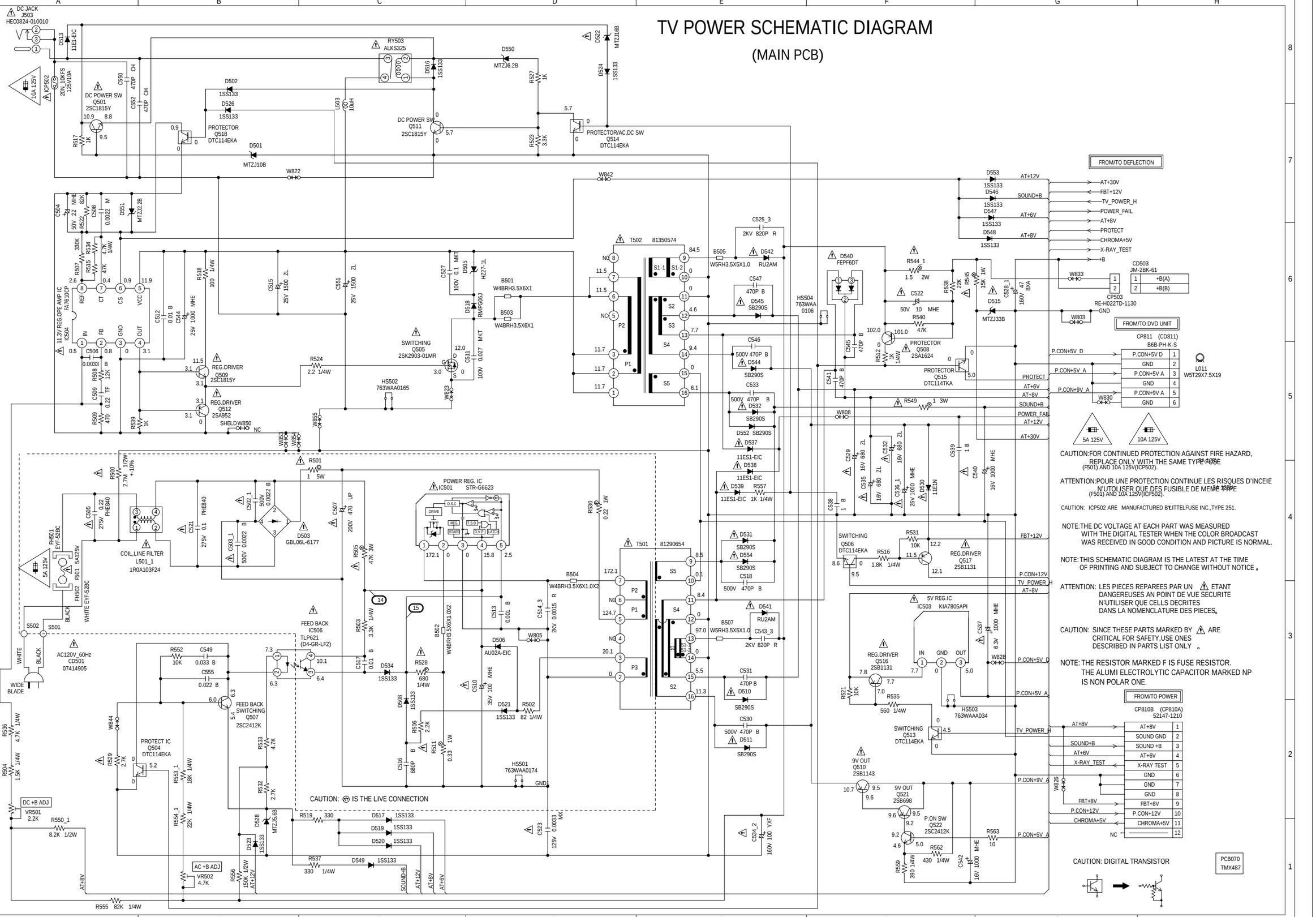
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

TUNER AUDIO SIGNAL

PCB250
TMX486

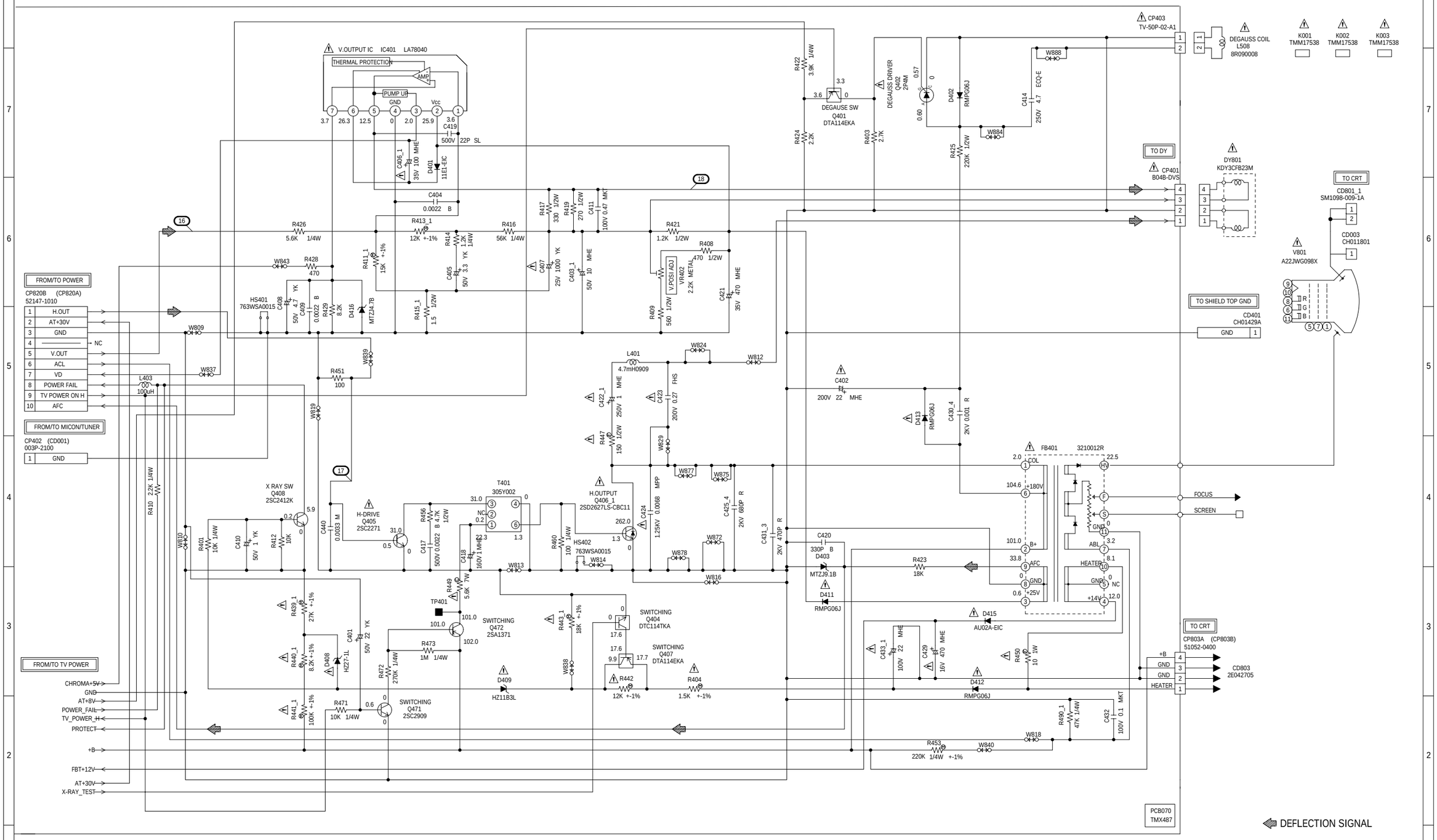
# TV POWER SCHEMATIC DIAGRAM

## (MAIN PCB)


DC JACK J503 HEC0824-010010
RY503 ALKS325
DC POWER SW Q501 2SC1815Y
PROTECTOR Q518 DTC114EKA
DC POWER SW Q511 2SC1815Y
PROTECTOR/AC,DC SW Q514 DTC114EKA
D501 MTZJ10B
W822
W842
T502 81350574
T501 81290654
SWITCHING Q505 2SK2903-01MR
HS502 763WAA0165
HS504 763WAA0106
HS501 763WAA0174
HS503 763WAA034
REG.DRIVER Q509 2SC1815Y
REG.DRIVER Q512 2SA952
FEED BACK SWITCHING Q507 2SC2412K
PROTECT IC Q504 DTC114EKA
FEED BACK IC506 TLP621 (D4-GR-LF2)
POWER REG. IC IC501 STR-G6623
COIL,LINE FILTER L501_1 1R0A103F24
AC120V_60Hz CD501 07414905
11.3V REG.OPE.AMP. IC IA761JCP IC504
5V REG.IC IC503 KIA7805API
REG.DRIVER Q516 2SB1131
SWITCHING Q506 DTC114EKA
SWITCHING Q513 DTC114EKA
PROTECTOR Q508 2SA1624
PROTECTOR Q515 DTC114TKA
9V OUT Q510 2SB1143
9V OUT Q521 2SB698
P.ON SW Q522 2SC2412K
FROM/TO DEFLECTION
AT+30V
FBT+12V
TV_POWER_H
POWER_FAIL
AT+8V
PROTECT
CHROMA+5V
X-RAY_TEST
+B
CD503 JM-2BK-61
CP503 RE-H022TD-1130
FROM/TO DVD UNIT
CP811 (CD811) B6B-PH-K-S
P.CON+5V_D
P.CON+5V_A
P.CON+9V_A
AT+6V
SOUND+B
AT+12V
5A 125V
10A 125V
CAUTION:FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE (F501) AND 10A 125V(ICP502).
ATTENTION:POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTOLISER QUE DES FUSIBLE DE MEME TYPE (F501) AND 10A 125V(ICP502).
CAUTION: ICP502 ARE MANUFACTURED BY LITTELFUSE INC.,TYPE 251.
NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。
NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.
FROM/TO POWER
CP810B (CP810A) 52147-1210
CAUTION: DIGITAL TRANSISTOR
PCB070 TMX487
CAUTION: ⚠ IS THE LIVE CONNECTION
DC +B ADJ VR501 2.2K
AC +B ADJ VR502 4.7K

# DEFLECTION SCHEMATIC DIAGRAM

## (MAIN PCB)




NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

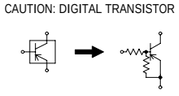
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

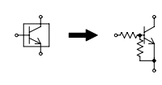
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: DIGITAL TRANSISTOR

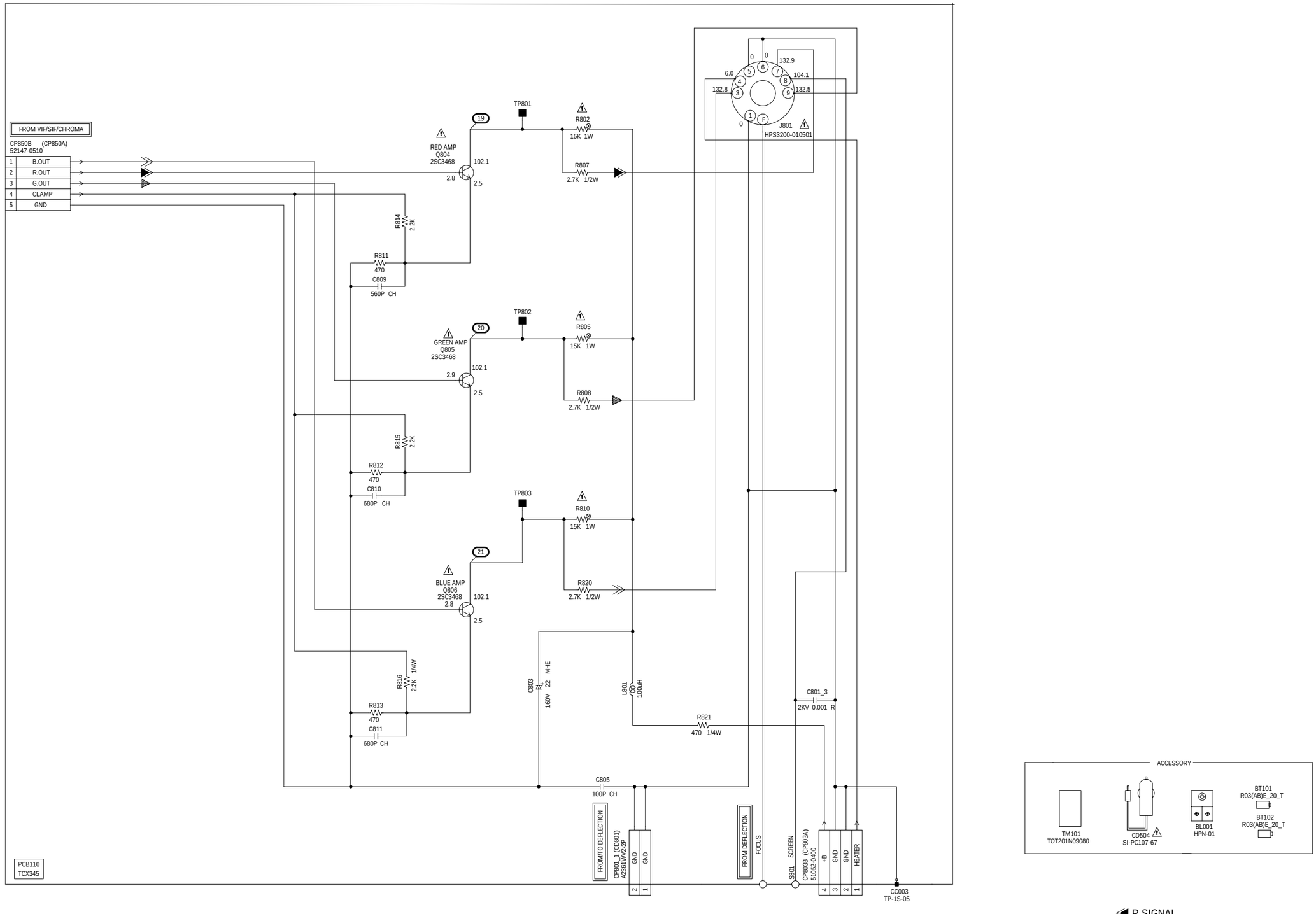


CAUTION: DIGITAL TRANSISTOR



# CRT SCHEMATIC DIAGRAM

(CRT PCB)




CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

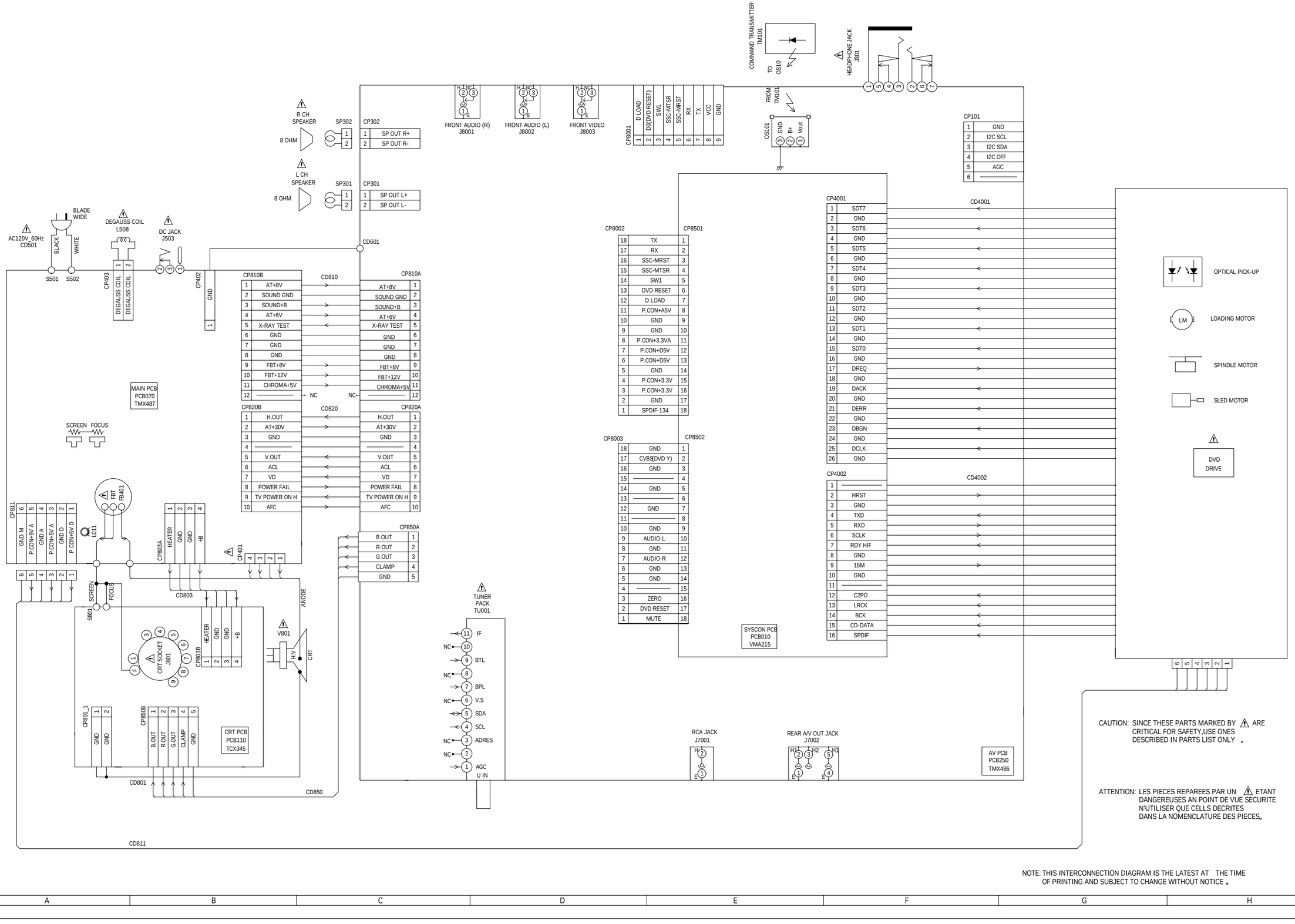
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

◀◀ R.SIGNAL
◀ G.SIGNAL
≪ B.SIGNAL

# INTERCONNECTION DIAGRAM



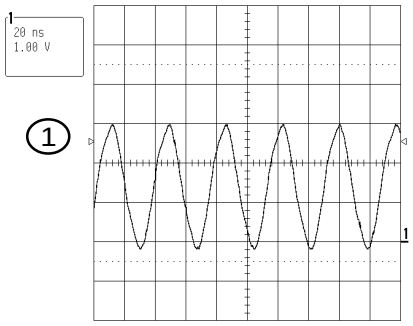

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

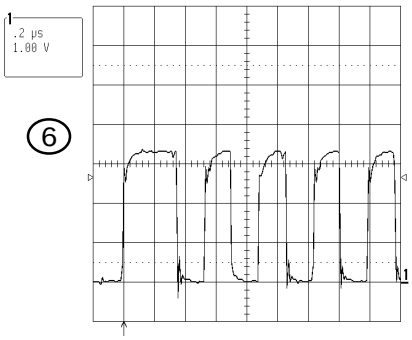
NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

# WAVEFORMS

## MPEG

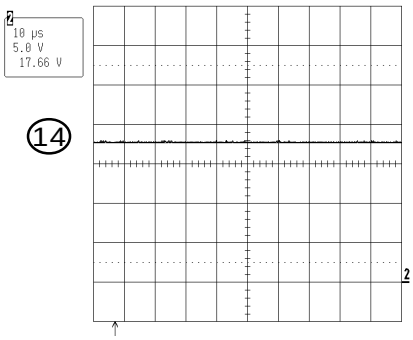



①



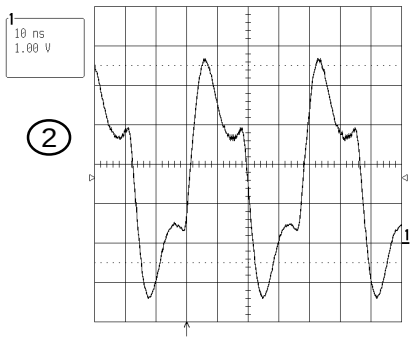

⑥

## TV POWER

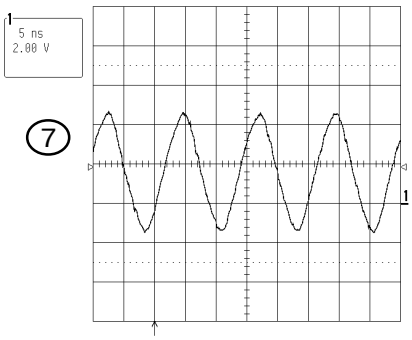



⑭

## SDRAM




②

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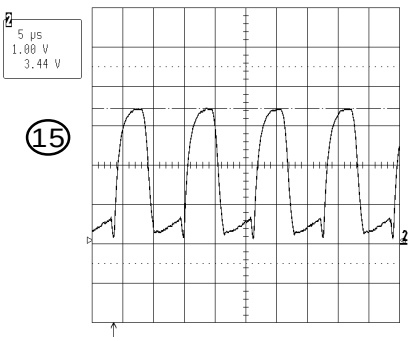
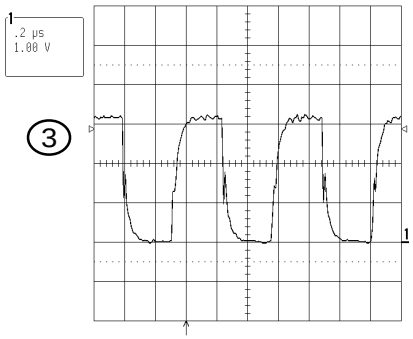



⑮

## SYSCON

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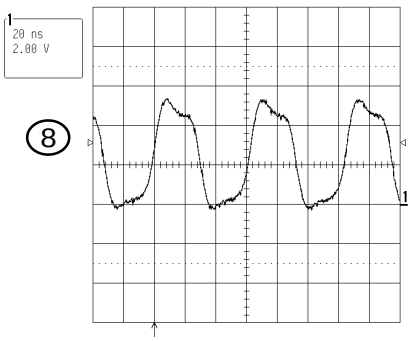
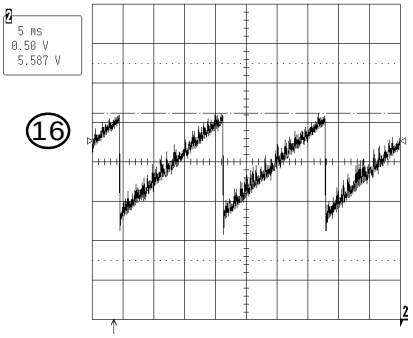


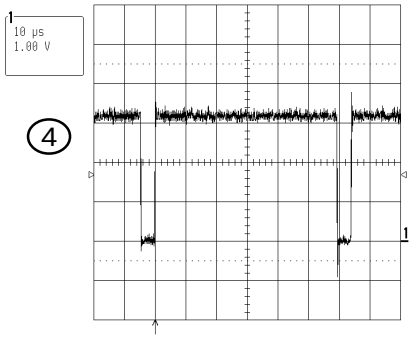

⑧

## DEFLECTION




⑯

## VIDEO ENCORDER

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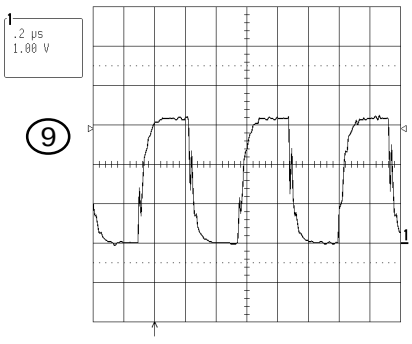


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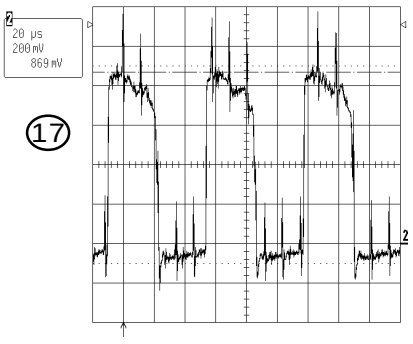
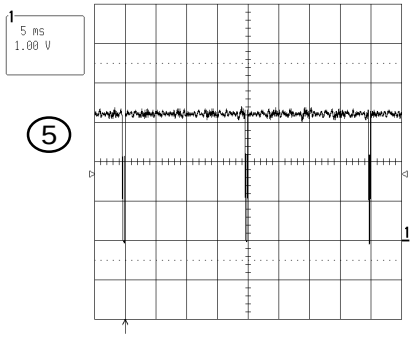
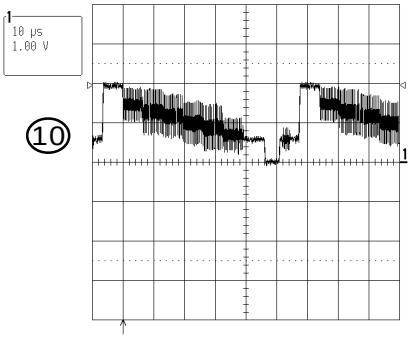



⑰




⑤

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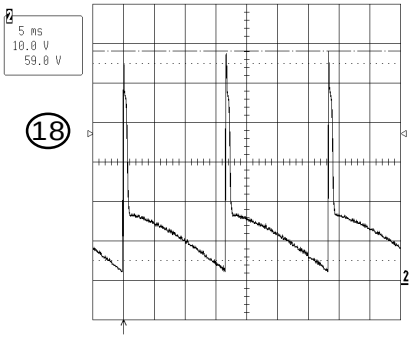


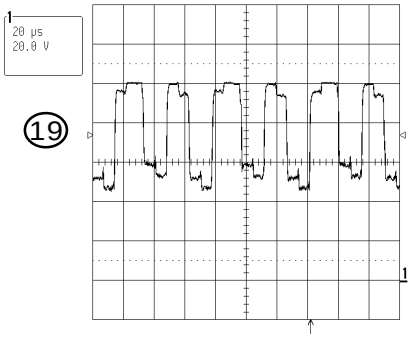

⑱

**NOTE:** The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

## CRT

⑲

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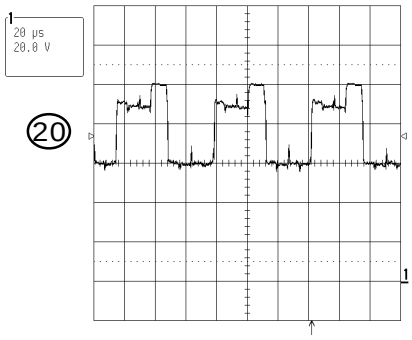


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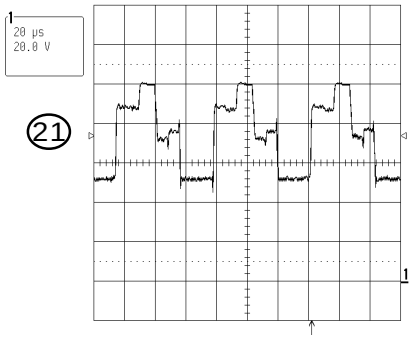


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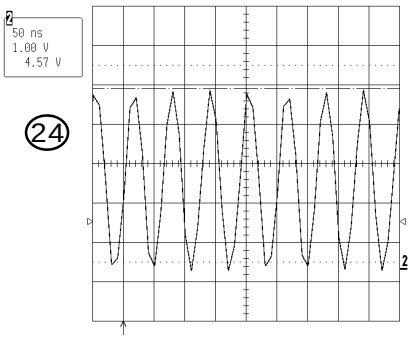


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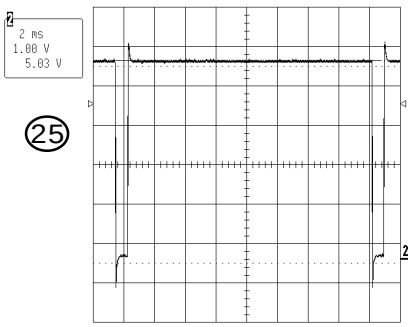


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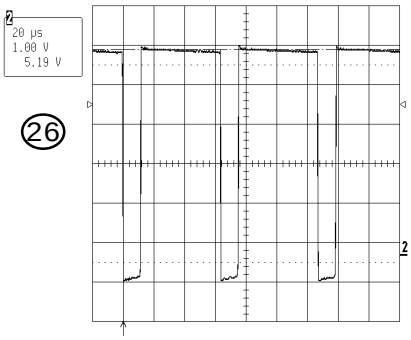


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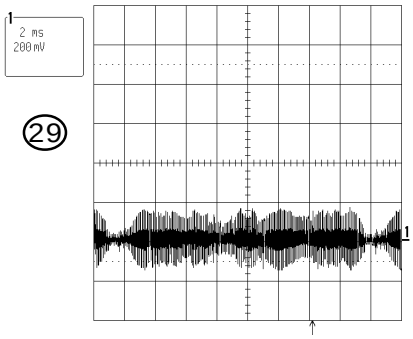


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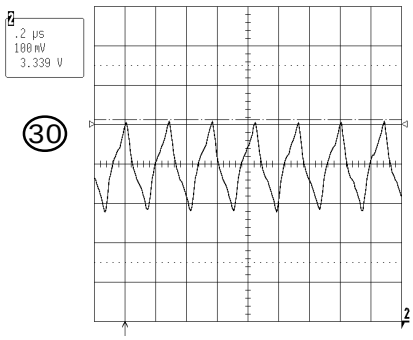


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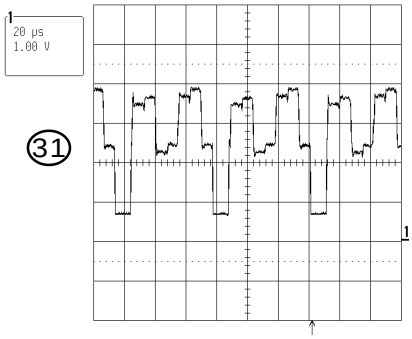


## MICON/TUNER

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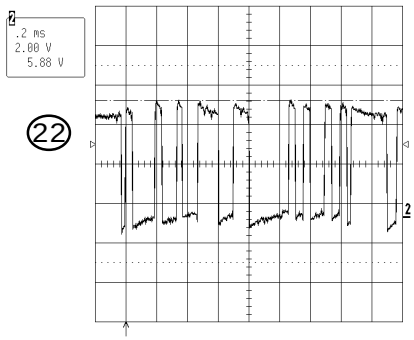


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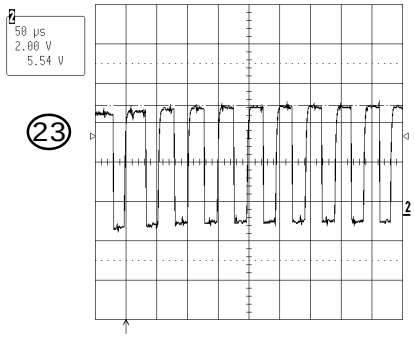
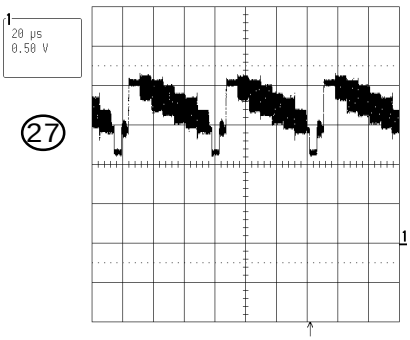



## VIF/SIF/CHROMA

㉗

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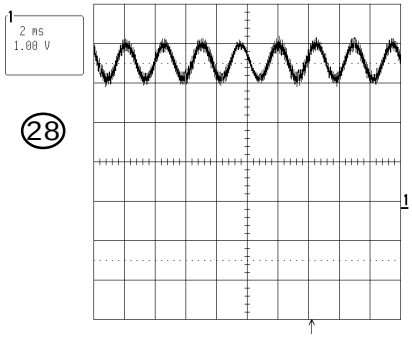


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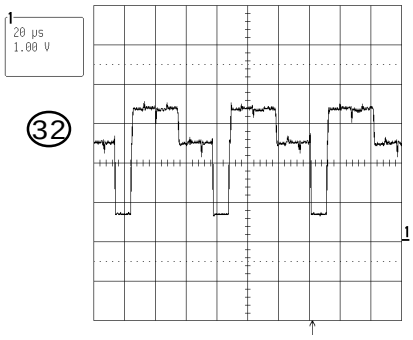


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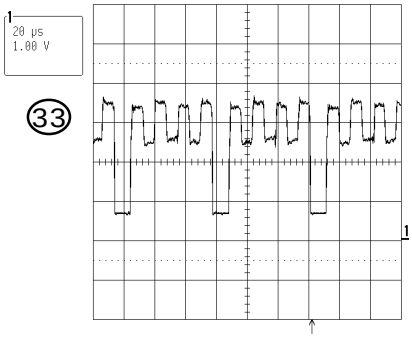
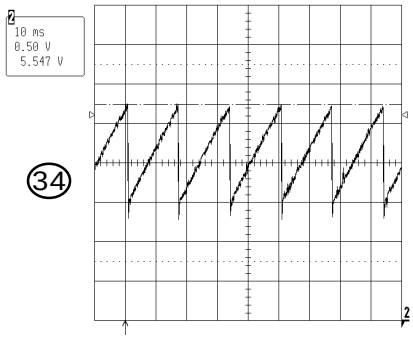


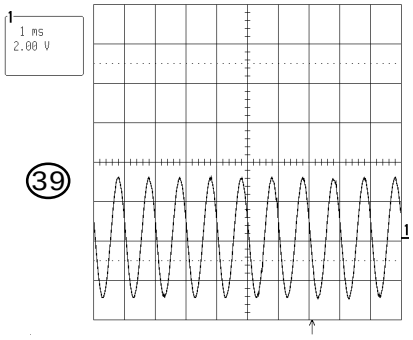

**NOTE:** The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

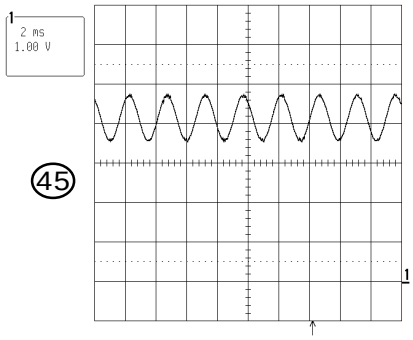
## IN/OUT




34

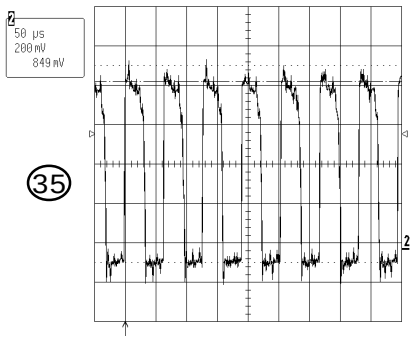



39

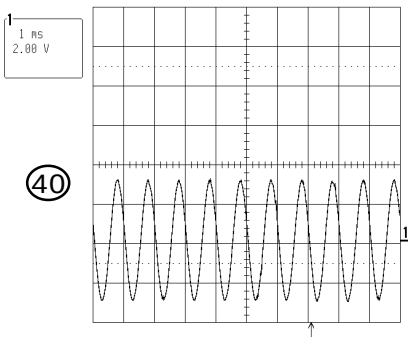



45

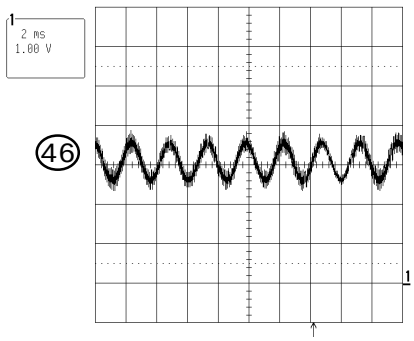
## STEREO



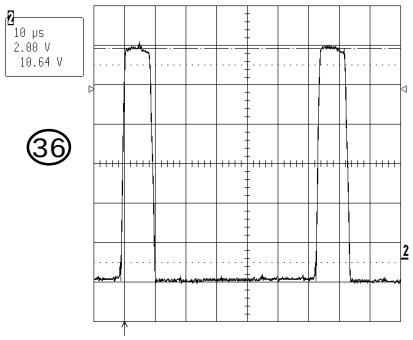

35



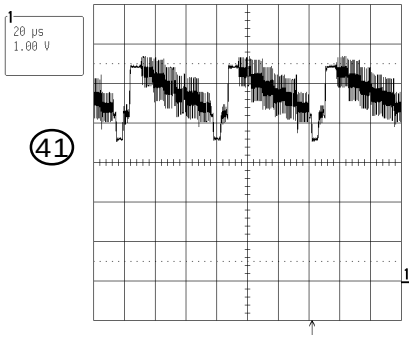

40



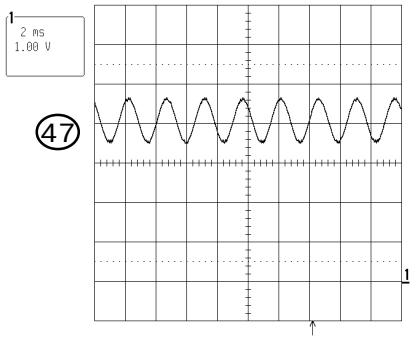

46




36

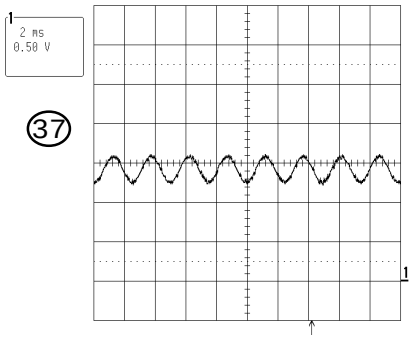



41

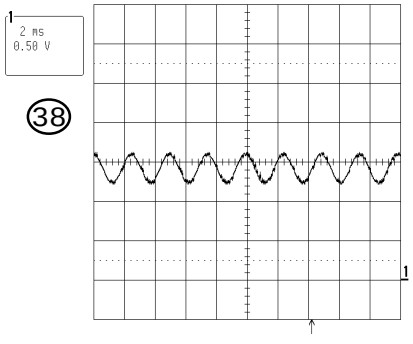



47

## SOUND AMP

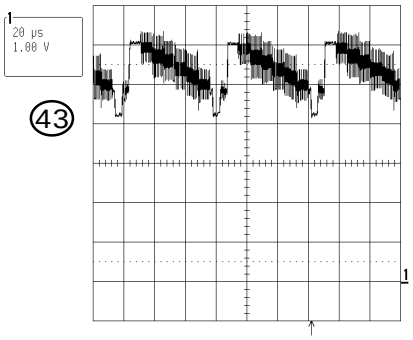



37

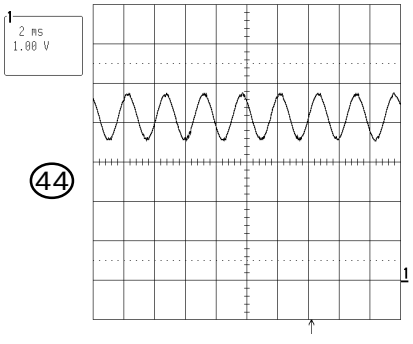



38

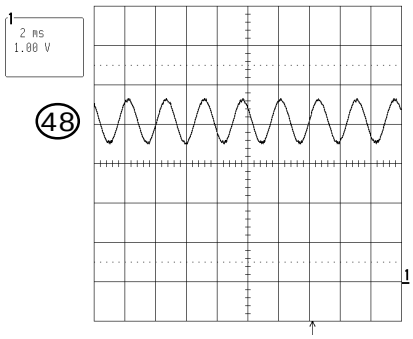
## AV SW




43



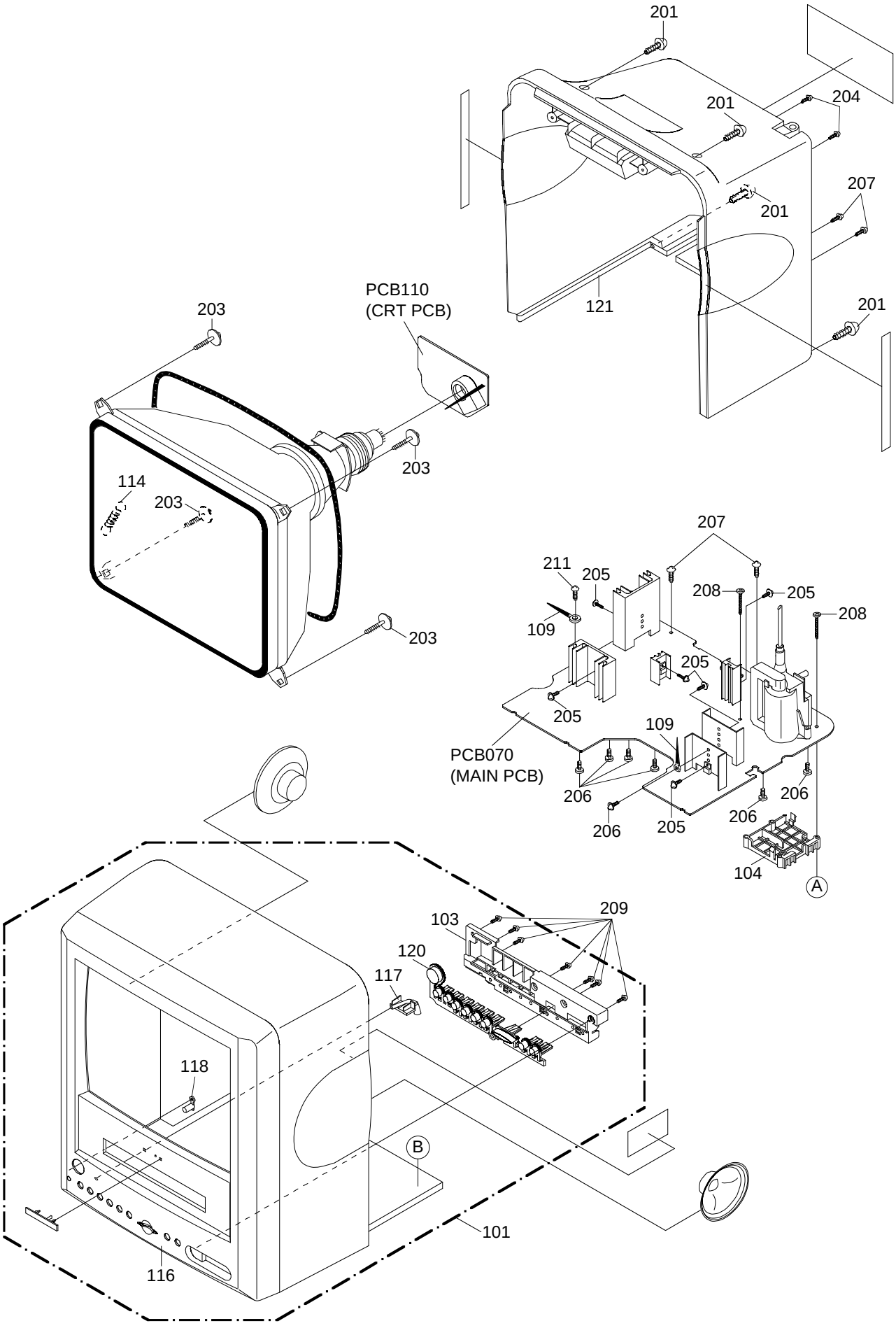

44



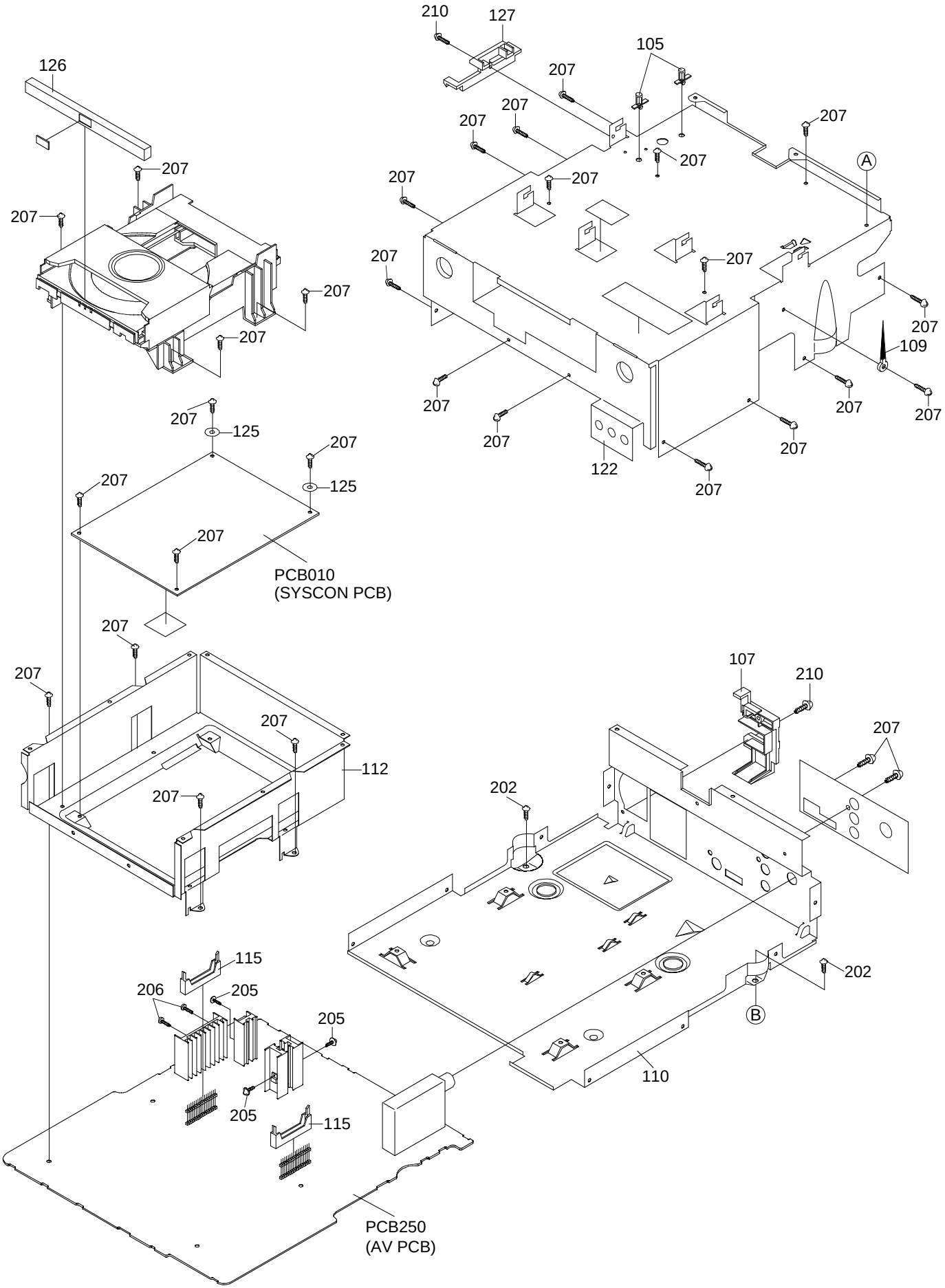

48

**NOTE:** The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# MECHANICAL EXPLODED VIEW



# MECHANICAL EXPLODED VIEW


210
127
105
126
207
207
207

# MECHANICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | |
|---|---|---|---|---|
| 101 | BZ310389 | A577A7I720 | CABINET,FRONT ASSY | |
| 103 | BZ710289 | 738WPA0017 | BUTTON,BASE | |
| 104 | BZ710459 | 761WPA0223 | HOLDER,FBT | |
| 105 | BZ710284 | 890PS70100 | PUSH SPACER | |
| 107 | BZ710448 | 761WPA0211 | HOLDER,BUSH | |
| 109 | BZ710039 | 8995034000 | CORD CLIP UL CO. | |
| 110 | BZ710438 | 752WSA0237 | PLATE,BOTTOM | |
| 112 | BZ710398 | 761WSA0079 | ANGLE,DECK | |
| 114 | BZ710294 | 741WUA0002 | SPRING,EARTH | |
| 115 | BZ710439 | 769WPA0017 | GUIDE,CONNECTOR | |
| 116 | BZ710690 | 701WPJB674 | CABINET,FRONT | |
| 117 | BZ710441 | 713WPA0151 | GLASS,LED | |
| 118 | BZ710442 | 713WPA0159 | GUIDE,REMOCON | |
| 120 | BZ710443 | 735WPJ0184 | BUTTON,FRAME | |
| 121 | BZ710291 | 702WPA0728 | CABINET,BACK | |
| 122 | BZ710444 | 752WSA0225 | SHIELD,TOP | |
| 125 | BZ710445 | 82A40B0104 | FLAT WASHER | |
| 126 | BZ710446 | 712WPB0085 | PLATE,TRAY-FRONT | |
| 127 | BZ710447 | 761WPA0212 | HOLDER,M/PCB | |
| 201 | BZ710035 | 8117540A64 | SCREW,TAPPING(B0) TRUSS | 4x16 |
| 202 | BZ710449 | 8117140804 | SCREW,TAPPING(B) PAN | 4x8 |
| 203 | BZ710450 | 8141J40B84 | SCREW,TAP TITE(P) GW15 | 4x28 |
| 204 | BZ710031 | 8110630A04 | SCREW,TAP TITE(P) BRAZIER | 3x10 |
| 205 | BZ710239 | 8109I30A04 | SCREW,TAP TITE(B) WH7 | 3x10 |
| 206 | BZ710019 | 8109630802 | SCREW,TAP TITE(B) BRAZIER | 3x8 |
| 207 | BZ710408 | 8109630604 | SCREW,TAP TITE(B) BRAZIER | 3x6 |
| 208 | BZ710024 | 810A130B04 | SCREW/WASHER(A) | M3x20 |
| 209 | BZ710030 | 8110630804 | SCREW,TAP TITE(P) BRAZIER | 3x8 |
| 210 | BZ710020 | 8109630804 | SCREW,TAP TITE(B) BRAZIER | 3x8 |
| 211 | BZ710147 | 8107630604 | SCREW,TAP TITE(S) BRAZIER | 3x6 |
| --- | BZ710300 | 792WHA0281 | PACKAGE,TOP | |
| --- | BZ710301 | 792WHA0282 | PACKAGE,BOTTOM | |
| --- | BZ710691 | 793WCDB242 | GIFT BOX | |
| --- | BZ614279 | J577A201 | INSTRUCTION BOOK | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | | Description | |
|---|---|---|---|---|---|
| | | **RESISTORS** | | | |
| R130 | BZ210235 | R00204103J | RC | 10K OHM 1/4W | |
| ⚠R165 | BZ210183 | R3X18A220J | R,METAL OXIDE | 22 OHM 2W | |
| ⚠R166 | BZ210184 | R3X281101J | R,METAL OXIDE | 100 OHM 1W | |
| ⚠R404 | BZ210112 | R4X5T6152F | R,METAL | 1.5K OHM 1/6W | |
| ⚠R439 | BZ210089 | R4X5T6273F | R,METAL | 27K OHM 1/6W | |
| ⚠R440 | BZ210090 | R4X5T6822F | R,METAL | 8.2K OHM 1/6W | |
| ⚠R441 | BZ210091 | R4X5T6104F | R,METAL | 100K OHM 1/6W | |
| ⚠R442 | BZ210114 | R4X5T6123F | R,METAL | 12K OHM 1/6W | |
| ⚠R443 | BZ210105 | R4X5T6183F | R,METAL | 18K OHM 1/6W | |
| ⚠R447 | BZ210185 | R65582151J | R,FUSE | 150 OHM 1/2W | |
| ⚠R449 | BZ210197 | R5X2CE562J | R,CEMENT | 5.6K OHM 7W | or |
| | BZ210186 | R5W1CE562J | R,CEMENT | 5.6K OHM 7W | |
| ⚠R450 | BZ210187 | R65581100J | R,FUSE | 10 OHM 1W | |
| ⚠R500 | BZ210001 | R21202275K | R,SOLID | 2.7M OHM 1/2W | |
| ⚠R501 | BZ210188 | R5Y2CD010J | R,CEMENT | 1 OHM 5W | |
| ⚠R505 | BZ210012 | R3X28B473J | R,METAL OXIDE | 47K OHM 3W | |
| ⚠R511 | BZ210048 | R3X181R33J | R,METAL OXIDE | 0.33 OHM 1W | |
| ⚠R528 | BZ210086 | R635U4681J | R,FUSE | 680 OHM 1/4W | |
| ⚠R529 | BZ210189 | R801R7272J | RC | 2.7K OHM 1/10W | |
| R530 | BZ210190 | R63581R22J | R,FUSE | 0.22 OHM 1W | |
| ⚠R544 | BZ210097 | R3X18A1R5J | R,METAL OXIDE | 1.5 OHM 2W | |
| ⚠R545 | BZ210099 | R3X181153J | R,METAL OXIDE | 15K OHM 1W | |
| R549 | BZ210191 | R3X28B010J | R,METAL | 1 OHM 3W | |
| ⚠R554 | BZ210192 | R002T4223J | RC | 22K OHM 1/4W | |
| R647 | BZ210261 | R00202271J | RC | 270 OHM 1/2W | |
| ⚠R802 | BZ210099 | R3X181153J | R,METAL OXIDE | 15K OHM 1W | |
| ⚠R805 | BZ210099 | R3X181153J | R,METAL OXIDE | 15K OHM 1W | |
| ⚠R810 | BZ210099 | R3X181153J | R,METAL OXIDE | 15K OHM 1W | |
| | | **CAPACITORS** | | | |
| C128 | BZ110173 | CHG0B0413K | CC | 0.001 UF 50V B | |
| C153 | BZ110156 | E5EZF0332M | CE | 3300 UF 6.3V | |
| C160 | BZ110156 | E5EZF0332M | CE | 3300 UF 6.3V | |
| C171 | BZ110156 | E5EZF0332M | CE | 3300 UF 6.3V | |
| C401 | BZ110240 | E02L05220M | CE | 22 UF 50V | or |
| | BZ110157 | E02LT5220M | CE | 22 UF 50V | |
| ⚠C402 | BZ110084 | E5EZFC220M | CE | 22 UF 200V | |
| ⚠C406 | BZ110018 | E5EZT4101M | CE | 100 UF 35V | |
| ⚠C407 | BZ110053 | E02LF3102M | CE | 1000 UF 25V | |
| C414 | BZ110085 | P21503475K | CMP | 4.7 UF 250V ECQ-E | |
| C420 | BZ110241 | CHG0B04L2K | CC | 330 PF 50V B | or |
| | BZ110071 | CHGTB04L2K | CC | 330 PF 50V B | |
| ⚠C422 | BZ110121 | E5EZTD010M | CC | 1 UF 250V | |
| ⚠C423 | BZ110086 | P447F2274J | CMPP | 0.27 UF 200V FHS | |
| ⚠C424 | BZ210161 | P4N8FJ682H | CMPP | 0.0068UF 1.25KV | |
| ⚠C425 | BZ110172 | C03L0R7U2K | CC | 680 PF 2KV R | |
| ⚠C429 | BZ110016 | E5EZT2471M | CE | 470 UF 16V | |
| C430 | BZ110182 | C03L0R713K | CC | 0.001 UF 2KV R | |
| ⚠C431 | BZ110176 | C03L0R7Q2K | CC | 470 PF 2KV R | |
| ⚠C433 | BZ110020 | E5EZT8220M | CE | 22 UF 100V | |
| ⚠C502 | BZ110088 | C0JBB05H3K | CC | 0.0022UF 500V B | |
| ⚠C503 | BZ110088 | C0JBB05H3K | CC | 0.0022UF 500V B | |
| ⚠C505 | BZ110138 | P2472B224M | CMP | 0.22UF 275V PHE840 | |
| ⚠C507 | BZ110012 | E51CGC471M | CE | 470 UF 200V | |
| ⚠C510 | BZ110018 | E5EZT4101M | CE | 100 UF 35V | |
| C514 | BZ110191 | C03L0R7E3K | CC | 0.0015UF 2KV R | |
| C515 | BZ110091 | E62FF3152M | CE | 1500 UF 25V | |
| ⚠C521 | BZ110145 | P2472B104M | CMP | 0.1 UF 275V PHE840 | |
| ⚠C523 | BZ110082 | C034F0JL3M | CC | 0.0033UF 125V MX | |
| C525 | BZ110183 | C03L0R7W2K | CC | 820 PF 2KV R | |
| C528 | BZ110023 | E62DFB470M | CE | 47 UF 160V | |
| ⚠C529 | BZ110108 | E62FT2681M | CE | 680 UF 16V | |
| ⚠C532 | BZ110108 | E62FT2681M | CE | 680 UF 16V | |
| ⚠C534 | BZ110139 | E62NFB101M | CE | 100 UF 160V | |
| ⚠C535 | BZ110108 | E62FT2681M | CE | 680 UF 16V | |
| ⚠C536 | BZ110032 | E5EZF3102M | CE | 1000 UF 25V | |
| ⚠C537 | BZ110158 | E5EZT0102M | CE | 1000 UF 6.3V | |
| ⚠C540 | BZ110028 | E5EZT2102M | CE | 1000 UF 16V | |
| C543 | BZ110183 | C03L0R7W2K | CC | 820 PF 2KV R | |
| C544 | BZ110032 | E5EZF3102M | CE | 1000 UF 25V | |
| C551 | BZ110091 | E62FF3152M | CE | 1500 UF 25V | |
| C801 | BZ110182 | C03L0R713K | CC | 0.001 UF 2KV R | |
| | | **DIODES** | | | |
| D101 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D102 | BZ410089 | 0021320220 | LED | SLP-9118C-51H-S-T1 | |
| D104 | BZ410020 | D97U05R11B | DIODE,ZENER | MTZJ5.1B T-77 | |
| D111 | BZ410066 | D97U06R21B | DIODE,ZENER | MTZJ6.2B T-77 | |
| D202 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | |
|---|---|---|---|---|
| | | **DIODES** | | |
| D401 | BZ410043 | D2WT011E10 | DIODE,SILICON | 11E1-EIC |
| D402 | BZ410014 | D2LTPG06J0 | DIODE,SILICON | RMPG06J-G3 |
| D403 | BZ410023 | D97U09R11B | DIODE,ZENER | MTZJ9.1B T-77 |
| ⚠ D408 | BZ410018 | D94TA27011 | DIODE,ZENER | HZ27-1L TD |
| ⚠ D409 | BZ410017 | D94TA11B13 | DIODE,ZENER | HZ11B3L TD |
| ⚠ D411 | BZ410014 | D2LTPG06J0 | DIODE,SILICON | RMPG06J-G3 |
| ⚠ D412 | BZ410014 | D2LTPG06J0 | DIODE,SILICON | RMPG06J-G3 |
| ⚠ D413 | BZ410014 | D2LTPG06J0 | DIODE,SILICON | RMPG06J-G3 |
| ⚠ D415 | BZ410063 | D2WTAU02A0 | DIODE,SILICON | AU02A-EIC |
| D416 | BZ410090 | D97U04R71B | DIODE,ZENER | MTZJ4.7B T-77 |
| D501 | BZ410061 | D97U01001B | DIODE,ZENER | MTZJ10B T-77 |
| D502 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D503 | BZ410044 | D4LZBL06L0 | DIODE | GBL06L-6177 |
| D505 | BZ410018 | D94TA27011 | DIODE,ZENER | HZ27-1L TD |
| D506 | BZ410063 | D2WTAU02A0 | DIODE,SILICON | AU02A-EIC |
| D508 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D510 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| ⚠ D511 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| D513 | BZ410043 | D2WT011E10 | DIODE,SILICON | 11E1-EIC |
| ⚠ D515 | BZ410037 | D97U03301B | DIODE,ZENER | MTZJ33B T-77 |
| D516 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D517 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D518 | BZ410014 | D2LTPG06J0 | DIODE,SILICON | RMPG06J-G3 |
| D519 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D520 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D521 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D522 | BZ410065 | D97U01601B | DIODE,ZENER | MTZJ16B T-77 |
| D523 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D524 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D526 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D528 | BZ410021 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| ⚠ D530 | BZ410009 | D28T11E1N1 | DIODE,SILICON | 11E1N-TA1B2 |
| ⚠ D531 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| ⚠ D532 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| D534 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D537 | BZ410059 | D2WT11ES10 | DIODE,SILICON | 11ES1-EIC |
| ⚠ D538 | BZ410059 | D2WT11ES10 | DIODE,SILICON | 11ES1-EIC |
| ⚠ D539 | BZ410059 | D2WT11ES10 | DIODE,SILICON | 11ES1-EIC |
| ⚠ D540 | BZ410091 | D230PF6DT0 | DIODE,SILICON | FEPF6DT |
| ⚠ D541 | BZ410028 | D2BTRU2AM0 | DIODE,SILICON | RU2AM V1 |
| ⚠ D542 | BZ410028 | D2BTRU2AM0 | DIODE,SILICON | RU2AM V1 |
| ⚠ D544 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| ⚠ D545 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| D546 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D547 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D548 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D549 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D550 | BZ410066 | D97U06R21B | DIODE,ZENER | MTZJ6.2B T-77 |
| D551 | BZ410067 | D97U02R21B | DIODE,ZENER | MTZJ2.2B T-77 |
| ⚠ D552 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| D553 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| ⚠ D554 | BZ410076 | D2WXB290S0 | DIODE,SILICON | SB290S |
| D603 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D604 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D605 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D610 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D611 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D612 | BZ410043 | D2WT011E10 | DIODE,SILICON | 11E1-EIC |
| D613 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D614 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D615 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D1002 | BZ410086 | DD7R0S3550 | DIODE,SILICON | 1SS355 TE-17 |
| D1003 | BZ410086 | DD7R0S3550 | DIODE,SILICON | 1SS355 TE-17 |
| D1004 | BZ410086 | DD7R0S3550 | DIODE,SILICON | 1SS355 TE-17 |
| D7005 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D7006 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D7010 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D7011 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D7012 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D7013 | BZ410006 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D8505 | BZ410086 | DD7R0S3550 | DIODE,SILICON | 1SS355 TE-17 |
| D8506 | BZ410086 | DD7R0S3550 | DIODE,SILICON | 1SS355 TE-17 |
| | | **ICS** | | |
| IC101 | BZ611119 | I55D06063C | IC | OEC6063C |
| IC102 | BZ611061 | I9UJ0T600C | IC | PST600C |
| ⚠ IC151 | BZ611015 | I1KA97805A | IC | KIA7805API |
| ⚠ IC152 | BZ611015 | I1KA97805A | IC | KIA7805API |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | |
|---|---|---|---|---|
| | | | **ICS** | |
| ⚠IC153 | BZ611033 | I1KA97809A | IC | KIA7809API |
| ⚠IC154 | BZ611015 | I1KA97805A | IC | KIA7805API |
| IC199 | BZ310386 | A577A7I255 | IC | S-24C08ADPA-01 |
| ⚠IC302 | BZ611035 | I0FSP75220 | IC | AN7522 |
| ⚠IC401 | BZ611025 | I03TD80400 | IC | LA78040 |
| ⚠IC501 | BZ611041 | I2BT066230 | IC | STR-G6623 |
| ⚠IC503 | BZ611015 | I1KA97805A | IC | KIA7805API |
| ⚠IC504 | BZ611044 | IDJD076100 | IC | FA7610CP |
| ⚠IC506 | BZ410040 | 0002500560 | PHOTO COUPLER | TLP621(D4-GR-LF2) |
| IC601 | BZ611064 | I05DC12530 | IC | TB1253N |
| IC701 | BZ611066 | I0UD013110 | IC | MM1311AD |
| IC902 | BZ611068 | I01FF58290 | IC | AN5829S |
| IC1001 | BZ611069 | ICQF067030 | IC | ZR36703 |
| IC1006 | BZ611070 | I57F04C01W | IC | BR24C01AF-WE2 |
| IC4001 | BZ611120 | ICQF067101 | IC | ZR36710 |
| IC4002 | BZ611072 | ICLJ0610DB | IC | HY57V161610DTC-8 |
| IC4004 | BZ611073 | I5CF040520 | IC | SN74LV4052APW |
| IC7001 | BZ611074 | I0QF045800 | IC | NJM4580M |
| IC8501 | BZ611076 | I5VF0865A0 | IC | BT865AKRF |
| IC8503 | BZ611077 | I17F017160 | IC | PCM1716E |
| IC8504 | BZ611073 | I5CF040520 | IC | SN74LV4052APW |
| | | | **TRANSISTORS** | |
| Q101 | BZ510021 | TNYJC05001 | COMPOUND TRANSISTOR | DTC124EKAT146 |
| Q103 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q105 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q110 | BZ510050 | TD3T008630 | TRANSISTOR,SILICON | 2SD863(E,F)-AE |
| Q111 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q151 | BZ510060 | TB3T011310 | TRANSISTOR,SILICON | 2SB1131(S,T)-AE |
| Q152 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q153 | BZ510083 | TBWT009260 | TRANSISTOR,SILICON | 2SB926(S,T)-AA |
| ⚠Q154 | BZ510076 | TB30011430 | TRANSISTOR,SILICON | 2SB1143(S,T,U) |
| Q155 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q156 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q157 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q158 | BZ510065 | TBWT006980 | TRANSISTOR,SILICON | 2SB698(E,F)-AA |
| Q159 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q160 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q202 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q203 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q204 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q205 | BZ510061 | T83A028140 | TRANSISTOR,SILICON | 2SC2814(F3,F4)-T |
| Q301 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q303 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q304 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q401 | BZ510025 | TPYJB05001 | COMPOUND TRANSISTOR | DTA114EKAT146 |
| ⚠Q402 | BZ510052 | TF2002P4M0 | THYRISTOR | 2P4M |
| Q404 | BZ510022 | TNYJJ05001 | COMPOUND TRANSISTOR | DTC114TKAT146 |
| ⚠Q405 | BZ510010 | TC3T022710 | TRANSISTOR,SILICON | 2SC2271(D,E)-AE |
| ⚠Q406 | BZ510036 | TD30026270 | TRANSISTOR,SILICON | 2SD2627LS-CBC11 |
| Q407 | BZ510025 | TPYJB05001 | COMPOUND TRANSISTOR | DTA114EKAT146 |
| Q408 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q471 | BZ510011 | TC3T029090 | TRANSISTOR,SILICON | 2SC2909(S,T)-AA |
| Q472 | BZ510005 | TA3T1371A0 | TRANSISTOR,SILICON | 2SA1371(D,E)-AE |
| ⚠Q501 | BZ510012 | TC5T018154 | TRANSISTOR,SILICON | 2SC1815Y(TPE2) |
| Q504 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| ⚠Q505 | BZ510053 | T410029030 | FET | 2SK2903-01MR |
| Q506 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q507 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| ⚠Q508 | BZ510004 | TA3T016240 | TRANSISTOR,SILICON | 2SA1624-AA |
| ⚠Q509 | BZ510012 | TC5T018154 | TRANSISTOR,SILICON | 2SC1815Y(TPE2) |
| ⚠Q510 | BZ510076 | TB30011430 | TRANSISTOR,SILICON | 2SB1143(S,T,U) |
| Q511 | BZ510012 | TC5T018154 | TRANSISTOR,SILICON | 2SC1815Y(TPE2) |
| ⚠Q512 | BZ510054 | TAST009520 | TRANSISTOR,SILICON | 2SA952(C)-T(L,M) |
| Q513 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q514 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q515 | BZ510022 | TNYJJ05001 | COMPOUND TRANSISTOR | DTC114TKAT146 |
| ⚠Q516 | BZ510060 | TB3T011310 | TRANSISTOR,SILICON | 2SB1131(S,T)-AE |
| ⚠Q517 | BZ510060 | TB3T011310 | TRANSISTOR,SILICON | 2SB1131(S,T)-AE |
| Q518 | BZ510020 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| Q521 | BZ510084 | TB3T006980 | TRANSISTOR,SILICON | 2SB698-AA |
| Q522 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q602 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q603 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q702 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| ⚠Q804 | BZ510085 | TC3T034680 | TRANSISTOR,SILICON | 2SC3468(D,E)-AE |
| ⚠Q805 | BZ510085 | TC3T034680 | TRANSISTOR,SILICON | 2SC3468(D,E)-AE |
| ⚠Q806 | BZ510085 | TC3T034680 | TRANSISTOR,SILICON | 2SC3468(D,E)-AE |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | |
|---|---|---|---|---|
| | | **TRANSISTORS** | | |
| Q7001 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7002 | BZ510001 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S |
| Q7003 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7004 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7005 | BZ510025 | TPYJB05001 | COMPOUND TRANSISTOR | DTA114EKAT146 |
| Q7006 | BZ510045 | TNYJD05001 | COMPOUND TRANSISTOR | DTC144EKAT146 |
| Q7007 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7008 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7009 | BZ510021 | TNYJC05001 | COMPOUND TRANSISTOR | DTC124EKAT146 |
| Q7010 | BZ510081 | TPYJA05001 | COMPOUND TRANSISTOR | DTA143EKAT146 |
| Q7011 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7012 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7013 | BZ510012 | TC5T018154 | TRANSISTOR,SILICON | 2SC1815Y(TPE2) |
| Q7014 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q7015 | BZ510034 | TA5T010154 | TRANSISTOR,SILICON | 2SA1015Y(TPE2) |
| Q8002 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q8003 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q8501 | BZ510002 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| | | **COILS &TRANSFORMERS** | | |
| L001 | BZ310005 | 02167D101K | COIL | 100 UH |
| L005 | BZ310118 | 02AHB9A972 | CORE,FERRITE | W5T29X7.5X19 |
| L010 | BZ310118 | 02AHB9A972 | CORE,FERRITE | W5T29X7.5X19 |
| L011 | BZ310118 | 02AHB9A972 | CORE,FERRITE | W5T29X7.5X19 |
| L201 | BZ310067 | 021LA6180K | COIL | 18 UH |
| L202 | BZ310041 | 02167F101J | COIL | 100 UH |
| L203 | BZ310041 | 02167F101J | COIL | 100 UH |
| L205 | BZ310049 | 021LA6R22M | COIL | 0.22 UH |
| L206 | BZ310005 | 02167D101K | COIL | 100 UH |
| L207 | BZ310109 | 021LA62R7K | COIL | 2.7 UH |
| L208 | BZ310085 | 021LA61R2M | COIL | 1.2 UH |
| L401 | BZ310004 | 021679472K | COIL | 4.7 MH |
| L403 | BZ310079 | 021LA6101J | COIL | 100 UH |
| ⚠L501 | BZ310099 | 029T000092 | COIL,LINE FILTER | 1R0A103F24 |
| L503 | BZ310083 | 021767100K | COIL | 10 UH |
| ⚠L508 | BZ310096 | 028R090008 | COIL,DEGAUSS | 8R090008 |
| L601 | BZ310041 | 02167F101J | COIL | 100 UH |
| L602 | BZ310041 | 02167F101J | COIL | 100 UH |
| L609 | BZ310117 | 021LA6330K | COIL | 33 UH |
| L701 | BZ310041 | 02167F101J | COIL | 100 UH |
| L702 | BZ310043 | 021LA6150K | COIL | 15 UH |
| L801 | BZ310002 | 021673101K | COIL | 100 UH |
| L902 | BZ310041 | 02167F101J | COIL | 100 UH |
| L7001 | BZ310041 | 02167F101J | COIL | 100 UH |
| L7002 | BZ310042 | 021LA6101K | COIL | 100 UH |
| L7003 | BZ310041 | 02167F101J | COIL | 100 UH |
| L8503 | BZ310127 | 02167B1R8K | COIL | 1.8 UH |
| T401 | BZ310025 | 03305Y002S | TRANS,HORIZONTAL DRIVE | 305Y002 |
| ⚠T501 | BZ310134 | 0481290654 | TRANSFORMER,SWITCHING | 81290654 |
| ⚠T502 | BZ310135 | 0481350574 | TRANSFORMER,SWITCHING | 81350574 |
| | | **JACKS** | | |
| ⚠J301 | BZ614144 | 0602131011 | HEADPHONE JACK | HSJ2000-01-010 |
| ⚠J503 | BZ614145 | 0602602006 | JACK DC | HEC0824-010010 |
| ⚠J801 | BZ614004 | 066X120014 | SOCKET,CATHODE RAY TUBE | HPS3200-010501 |
| J7001 | BZ614225 | 060Q401038 | RCA JACK | YKC21-3895 |
| J7002 | BZ614204 | 060Q411015 | RCA JACK | AV3-19D-1 |
| J8001 | BZ614280 | 060G421020 | RCA JACK | HTJ-032-05AR |
| J8002 | BZ614147 | 060G421017 | RCA JACK | HTJ-032-05AW |
| J8003 | BZ614146 | 060G421016 | RCA JACK | HTJ-032-05AY |
| | | **SWITCHES** | | |
| SW101 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW102 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW103 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW104 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW105 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW106 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW107 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW108 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW109 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| SW110 | BZ612001 | 0504201T31 | SWITCH,TACT | SKHVBED010 |
| | | **VARIABLE RESISTORS** | | |
| VR402 | BZ210194 | V1263H3BT7 | VOLUME,SEMI FIXED | RH0683CJ3R |
| VR501 | BZ210128 | V1163H3BTC | VOLUME,SEMI FIXED | EVNCYAA03BE3 |
| VR502 | BZ210068 | V1163Q3BTC | VOLUME,SEMI FIXED | EVNCYAA03BQ3 |
| | | **P.C.BOARD ASSEMBLIES** | | |
| PCB010 | BZ610214 | A577A2I010 | PCB ASS'Y | VMA215A |
| PCB070 | BZ610215 | A577A2I070 | PCB ASS'Y | TMX487B |
| PCB110 | BZ610216 | A577A2I110 | PCB ASS'Y | TCX345B |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | | |
|---|---|---|---|---|---|
| | | **P.C.BOARD ASSEMBLIES** | | | |
| PCB250 | BZ310387 | A577A7I250 | PCB ASS'Y | TMX486A | |
| | | **MISCELLANEOUS** | | | |
| B501 | BZ310130 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1 | |
| B502 | BZ310122 | 024HT03563 | CORE,BEADS | W4BRH3.5X6X1.0X2 | |
| B503 | BZ310130 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1 | |
| B504 | BZ310122 | 024HT03563 | CORE,BEADS | W4BRH3.5X6X1.0X2 | |
| B505 | BZ310121 | 024HT03553 | CORE,BEADS | W5RH3.5X5X1.0 | |
| B507 | BZ310121 | 024HT03553 | CORE,BEADS | W5RH3.5X5X1.0 | |
| B1001 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B4001 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B4002 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B7001 | BZ310130 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1 | |
| B8501 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B8502 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B8503 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| B8505 | BZ310130 | 024XC36002 | CORE,BEADS | N2012ZP600T25 | |
| BL001 | BZ310014 | 023C00022A | COIL BALUN | HPN-01 | |
| CD001 | BZ614282 | 06CH01423A | CORD,CONNECTOR | CH01423A | |
| CD003 | BZ614263 | 06CH011801 | CORD,EIS CONNECTOR | CH011801 | |
| CD401 | BZ614264 | 06CH01429A | CORD,EIS CONNECTOR | CH01429A | |
| ⚠CD501 | BZ614197 | 1207414905 | CORD,AC BUSH | 7414905 | |
| CD503 | BZ614133 | 069X620040 | CONNECTOR | JM-2BK-61 | |
| ⚠CD504 | BZ614196 | 121B164101 | CORD,CAR BATTERY | SI-PC107-67 | |
| CD801 | BZ614175 | 06CU82039A | CORD,CONNECTOR | SM1098-009-1A | |
| CD803 | BZ614151 | 122E042705 | CORD,JUMPER | 2E042705 | |
| CD810 | BZ614426 | WKL6022038 | FLAT CABLE AWM2468 A | WG26 12C BLACK 220MM | |
| CD811 | BZ614266 | 06CH26105B | CORD,CONNECTOR | CH26105B | |
| CD820 | BZ614427 | WHL6028038 | FLAT CABLE AWM2468 A | WG26 10C BLACK 280MM | |
| CD850 | BZ614310 | WCL6844038 | FLAT CABLE AWM2468 A | WG26 5C GRAY 440MM | |
| CF201 | BZ613016 | 1011T4R517 | FILTER,CERAMIC | EFCT4R5MW5 | |
| CF202 | BZ613015 | 1011T4R504 | FILTER,CERAMIC | EFCT4R5YS5A | |
| CF203 | BZ613036 | 1022045R74 | FILTER,SAW | SAFGP45M7VFGZ00B | |
| CF204 | BZ613037 | 1012004702 | FILTER,CERAMIC TRAP | MKTGA47M2CAHP00B05 | |
| CP101 | BZ614238 | 0697260650 | CONNECTOR PCB SIDE | TKC-M06X-A1 | |
| CP301 | BZ614268 | 069W120029 | CONNECTOR PCB SIDE | TID-X02P-M1 | |
| CP302 | BZ614268 | 069W120029 | CONNECTOR PCB SIDE | TID-X02P-M1 | |
| ⚠CP401 | BZ614154 | 069X440029 | CONNECTOR PCB SIDE | B04B-DVS | |
| CP402 | BZ614016 | 069W01001A | CONNECTOR PCB SIDE | 003P-2100 | |
| ⚠CP403 | BZ614018 | 069W420029 | CONNECTOR PCB SIDE | TV-50P-02-A1 | |
| CP503 | BZ614137 | 069X620030 | CONNECTOR PCB SIDE | RE-H022TD-1130 | |
| CP801 | BZ614269 | 069S320010 | CONNECTOR PCB SIDE | A2361WV2-2P | |
| CP811 | BZ614270 | 069X260579 | CONNECTOR PCB SIDE | B6B-PH-K-S | |
| CD4001 | BZ614243 | 122S0Q0901 | CORD,JUMPER | 2S0Q0901 | |
| CD4002 | BZ614243 | 122S0G0901 | CORD,JUMPER | 2S0G0901 | |
| CP4001 | BZ614245 | 069JVQ0180 | CONNECTOR PCB SIDE | IMSA-9615S-26C-P | |
| CP4002 | BZ614245 | 069JVG0180 | CONNECTOR PCB SIDE | IMSA-9615S-16C-P | |
| CP8001 | BZ614246 | 0694290139 | CONNECTOR PCB SIDE | 173979-9 | |
| CP8002 | BZ614271 | 069J2I0660 | CONNECTOR PCB SIDE | 9210B-1-18Z713-T | |
| CP8003 | BZ614271 | 069J2I0660 | CONNECTOR PCB SIDE | 9210B-1-18Z713-T | |
| CP803A | BZ614157 | 067R104019 | WIRE HOLDER | 51052-0400 | |
| CP803B | BZ614157 | 067R104019 | WIRE HOLDER | 51052-0400 | |
| CP810A | BZ614272 | 067U012039 | WIRE HOLDER | B2013H02-12P | |
| CP810B | BZ614251 | 069R2C0589 | CONNECTOR PCB SIDE | 52147-1210 | |
| CP820A | BZ614273 | 067U010049 | WIRE HOLDER | B2013H02-10P | |
| CP820B | BZ614274 | 069R2A0589 | CONNECTOR PCB SIDE | 52147-1010 | |
| CP8501 | BZ614275 | 069W2I0071 | CONNECTOR PCB SIDE | TKC-A18X-J1 | |
| CP8502 | BZ614275 | 069W2I0071 | CONNECTOR PCB SIDE | TKC-A18X-J1 | |
| CP850A | BZ614276 | 067U005049 | WIRE HOLDER | B2013H02-5P | |
| CP850B | BZ614212 | 069R250589 | CONNECTOR PCB SIDE | 52147-0510 | |
| CUS251 | BZ710279 | 800WFAA006 | CUSHION A | | |
| CUS253 | BZ710149 | 800WFAA008 | CUSHION C | | |
| ⚠DY801 | BZ310088 | 0271080901 | DY | KDY3CFB23M | |
| ⚠DK4001 | BZ310388 | 169G00011A | DECK CD | DVD-KIT510SE-A | |
| EL001 | BZ614043 | 124116281A | EYE LET | XRY16X28BD | |
| EL002 | BZ614044 | 124120301A | EYE LET | XRY20X30BD | |
| ⚠F501 | BZ614177 | 081PC05004 | FUSE | 51MS050LCC | |
| ⚠FB401 | BZ310089 | 043210012R | TRANSFORMER,FLYBACK | 3210012R | |
| FH501 | BZ614005 | 06710T0006 | HOLDER,FUSE | EYF-52BC | |
| FH502 | BZ614005 | 06710T0006 | HOLDER,FUSE | EYF-52BC | |
| ⚠ICP502 | BZ614277 | 0835C10003 | MICRO FUSE | 20N_10KFS | |
| OS101 | BZ614171 | 077Q014003 | REMOTE RECEIVER | PIC-28143SY-2 | |
| ⚠RY503 | BZ612011 | 0560V10118 | RELAY | ALKS325 | |
| RY7001 | BZ612012 | 0560110203 | RELAY | ATX207 | |
| ⚠SP301 | BZ614428 | 070C132019 | SPEAKER | SA08A05BWC | or |
| | BZ614278 | 070W132017 | SPEAKER | NS-300RW-1 | |
| ⚠SP302 | BZ614428 | 070C132019 | SPEAKER | SA08A05BWC | or |
| | BZ614278 | 070W132017 | SPEAKER | NS-300RW-1 | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location No. | TSB P/N | Reference No. | Description | |
|---|---|---|---|---|
| | | **MISCELLANEOUS** | | |
| TM101 | BZ614429 | 076D0EF010 | TRANSMITTER | TOT201N09080 |
| ⚠TU001 | BZ610125 | 0145K00055 | TUNER,VHF-UHF | TECC1040PG32D |
| ⚠V801 | BZ614161 | 09D1090401 | CRT W/O DY | A22JWG098X |
| X101 | BZ613019 | 1002T01606 | CERAMIC OSCILLATOR | CSTLS16M0X53-A0 |
| X601 | BZ613004 | 100CT3R505 | CRYSTAL | HC-49/C |
| X1001 | BZ613020 | 100CT01210 | CRYSTAL | HC-49/U |
| X4001 | BZ613021 | 100DA02706 | CRYSTAL | AT-49 |

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

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